A STUDY OF SCHOOL HEALTH STANDARDS

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A STUDY OF SCHOOL HEALTH STANDARDS

BY

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DEDICATION

TO THOSE EARLY STUDENTS OF SCHOOL HEALTH PROBLEMS,
WHOSE CLARITY OF VISION MARKED THE WAY, AND
WHOSE FAITHFULNESS TO THE TASK SET FOR THEM-
SELVES HAS MADE THE INVESTIGATION POSSI-
BLE, THIS STUDY IS GRATEFULLY DEDICATED

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PART I
BACKGROUNDS

CHAPTER I

INTRODUCTION

This investigation is concerned throughout with a study of working standards for a school health program. The purpose of the study is to isolate a group of standards that may or may not be controversial issues and to scrutinize these standards in the light of their value in a comprehensive school health program.

The preceding studies on problems of school health or school health education have dealt with specific phases of the problem:[1] Strang, who made the first study in the field, sought to determine desirable subject matter in health education; Lerrigo investigated the national health problems as shown in the United States Public Health reports and other sources for content in health education; Cairns sought to find through a study of national health problems, a scientific basis for health instruction; Carrothers made a study of the health of teachers in relation to absence from duty; Boillin, through the use of a regression equation, studied the weights of young college women, and offered an instrument for determining the expected weight of young women through the use of several correlated measurements; Oberteuffer studied the interests of young college men in the subject of hygiene, and set up some basic principles for planning a program in hygiene for college freshmen; Laton applied the principles of learning to the teaching of health education through biology in the ninth grade class; Hussey investigated principles governing the selection of method in health education; Spencer, by means of a set of standards (a gauge for purposes of measurement) selected from the literature on school health, studied the activities of teacher preparation institutions in the guidance of prospective classroom teachers for their work in the school health program.

[1] A bibliography of these studies appears at the end of this chapter.

Barker, with an interview technique, made a study of the adjustment of classroom teachers in relation to their efficiency in teaching; Rhoton, by means of a true-false test, sampled the college student groups in Pennsylvania on their health superstitions and compared the groups representing the various subject matter fields on their relative freedom from the specific superstitions on which the groups were tested; Chappelear and Meier investigated the range of health material in the science text books, and in the natural and biological science courses of study in high schools. Of the studies which embraced two fields, Davis set up and tried out a survey instrument and technique for making a study of the health and physical education programs in the elementary schools; Hughes, with standards, some selected from literature and "some gleaned from his own experience" and all validated through the approval of "experts," made a study of the health and physical education programs in a selected group of colleges. Of the studies made outside higher institutions of learning, yet dealing specifically with problems of school health or school health education, the School Health Research Monographs, published by the American Child Health Association, are worthy of note. In these, Franzen applies the statistical method to a study of children's health practices as revealed by tests, the determination of the optimum weight for ten and eleven year old boys, dental caries in school children, and the socio-economic factors in children's health behavior.

From this brief survey of the recent investigations in the field of school health it is apparent that no one has previously made a study of the school health program as a whole from the point of view of the working standards included.

That the problem presented in the present study is pertinent is verified by evidence. The need for an attack on school health problems that will throw into clear focus the troublesome questions involved, and then deal with the questions, is indicated in the following: Surveys reflect a woeful lack in the attention

given in the public schools to a wide range of the problems of school health; the survey reports show the failure of survey staffs and survey techniques in the discovery or recognition of the presence or absence of important phases of school health in the school systems studied; the mass of inquiries from the field that flood the desks of insurance companies, commercial firms, and organizations interested in the promotion of child health give evidence of an appreciation of the presence of the problems and of a desire to cope with them. Interviews in the summer of 1931 with 22 young school administrators in cities ranging from 5,000 to 10,000, and widely distributed throughout the country, yielded evidence of a keen interest in the development of a school health program, and of a desire to understand the school health problem better. These interviews also gave evidence of the lack of information as to what constitutes a school health program beyond hand washing and correction of remediable defects.

The contribution of the present study lies in the fields of content and method. In content it provides a wide range of working standards for a school health program, proposed on the basis of the findings of research or on the reports of satisfactory practice through a number of years, and given the approval of conferences serving as clearing houses for school health standards and for a discussion of school health problems. In method the contribution is in a plan used for the isolation and subsequent scrutiny of standards in which there are controversial issues. Probably the chief contribution of the investigation lies in partially clearing the ground for a series of similar studies which in time should make available an increasingly wider range of school health standards in which controversial issues are settled, or in which the way is indicated whereby a settlement may be reached. This study makes no claim to the establishment of new programs and methods in school health; it is, however, a step in the direction of raising the general level of school health programs up to the level of the best.

The study is divided into three parts:

I. A survey of the literature on school health standards and on the growing conception of a comprehensive school health program.

II. The isolation of controversial issues in school health standards through the application of the criterion of acceptance to a wide range of standards assembled from the literature reviewed.
This part of the study calls for the preparation and use of an instrument which will facilitate the isolation of controversial issues in the standards by subjecting these standards to the criterion of acceptance; for the selection of a group of leaders in school health; and for securing their coöperation in the study.

III. A critical study of the isolated school health standards in an attempt to discover the controversial factors, and the possibility of settlement of the controversies.

Definition of Terms

Throughout this study, the term *health* is used in its broadest sense and in harmony with the recognition that the mental, emotional, and social aspects of health are equally important with the physical aspect.

When *standards* were proposed in the literature on school health, they were offered as *working standards* or suggestions for the improvement or the extension of the program. That is the sense in which they are used in this study; they are not in any instance used as quantitative measurements.

The *school health program* refers to those administrative, service, and instructional provisions and activities within the school organization that affect the healthful growth and development of school children.

The terminology used throughout the study is in accord with that accepted and used by the Joint Committee of the National Education Association and the American Medical Association in its report, "Health Education,"[2] and with that used

[2] Health Education—A Program for Public Schools and Teacher Training Institutions. Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical As-

in the Fourth Yearbook of the Department of Superintendence of the National Education Association.[3]

Health service covers the various protective measures adopted by the school to conserve and improve the health of children, and as such does not primarily depend upon, or involve the knowledge, responsibility or activity of the pupils themselves. It includes:

1. *Health examinations and inspections,* as made by physician, psychiatrist, dentist, nurse, or teacher.
2. *The program for correction of remediable defects of school children.*
3. *Adjustments of school organization to meet varying health needs:*
   a. Education of the handicapped.
   b. School feeding.
4. *Control of communicable disease:* detection, isolation, exclusion, readmission, immunization.
5. *Hygiene of environment* (sanitation) which includes the hygiene of the school plant, the hygiene of instruction and management, the health of teachers and other school employees who come in contact with children, and safety and first aid provisions.

"*Health Education* is the sum of experience in the school and elsewhere that favorably influences habits, attitudes, and knowledge relating to individual community and racial health." This study recognizes that health education can be promoted only by emphasizing all aspects of health: physical, mental, emotional, and social.

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sociation, National Education Association, 1201 Sixteenth Street, N.W., Washington, D.C., 1930.

[3] Report prepared by Thomas D. Wood as a part of the General Report of the Sub-Committee on Health and Physical Education, published in the Fourth Yearbook of the Department of Superintendence of the National Education Association, February, 1926.

2. Boillin, Mary L. *Determination of the Inter-relations, Partial and Multiple, Between Various Anthropometric Measurements of College Women,* Contributions to Education, No. 450, Bureau of Publications, Teachers College, Columbia University, New York, 1930. 63 pp.
3. Cairns, Laura. *A Scientific Basis for Health Instruction in Public Schools,* University of California Publications in Education, Vol. 2, No. 5, pp. 339-434, University of California Press, Berkeley, California, 1929.
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6. Davis, Elwood C. *Methods and Techniques Used in Surveying Health and Physical Education in City Schools,* Contributions to Education, No. 515, Bureau of Publications, Teachers College, Columbia University, New York, 1932. 162 pp.
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11. Hughes, William L. *The Administration of Health and Physical Education for Men in Colleges and Universities,* Contributions to Education, No. 541, Bureau of Publications, Teachers College, Columbia University, New York, 1932. 181 pp.

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13. Laton, Anita D. *The Psychology of Learning Applied to Health Education Through Biology,* Contributions to Education, No. 344, Bureau of Publications, Teachers College, Columbia University, New York, 1929. 103 pp.
14. Lerrigo, Marion O. *Health Problem Sources,* Contributions to Education, No. 224, Bureau of Publications, Teachers College, Columbia University, New York, 1926. 151 pp.
15. Meier, Lois. *Health Materials in Science Textbooks,* Bureau of Publications, Teachers College, Columbia University, 1927. 104 pp.
16. Oberteuffer, Delbert. *Personal Hygiene for College Students,* Contributions to Education, No. 407, Bureau of Publications, Teachers College, Columbia University, New York, 1930. 121 pp.
17. Rhoton, Paul. *Health Misconceptions of Prospective Teachers,* Penn. State Studies in Education, No. 3, School of Education, The Pennsylvania State College, State College, Pennsylvania, 1932. 80 pp.
18. Spencer, Mary. *Health Education for Teachers,* A doctor's dissertation, Teachers College, Columbia University, New York. *MS.*
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CHAPTER II

REVIEW OF THE LITERATURE ON SCHOOL HEALTH

Nineteenth-Century Literature on School Hygiene

The development in this country of a body of literature on the health of school children began early in the last quarter of the nineteenth century. Among the most important contributions of the century are those embodied in reports of state boards of health, boards of education, and in the proceedings of the annual conferences of such national organizations as: the National Education Association, the American Public Health Association, and the American Social Science Association. Out of forty American titles, published before 1890 and listed by Burnham as representative and important American contributions, fifteen were embodied in such reports. They included such studies as Bowditch, "Growth of School Children";[1] Lincoln, "Hygiene of the Public Schools of Massachusetts";[2] and Peckham, "Growth of Children."[3]

Burnham's[4] bibliography on school hygiene is prefaced by the statement that in it he is offering a representative list of the most important contributions to school hygiene made during the last quarter of the nineteenth century. He states further that, because of the lack of attention in books published in English to certain phases of the school hygiene problem, it has been necessary to include foreign titles, especially those of German contributions.

[1] Bowditch, H. P., "Growth of School Children," *Report of the State Board of Health of Massachusetts,* Vol. VIII, 1877.

[2] Lincoln, David, *Hygiene of the Public Schools of Massachusetts.* Report of the State Board of Education, 1879.

[3] Peckham, "Growth of Children," *Report of the Wisconsin Board of Health,* Vol. VI, 1881.

[4] Burnham, William H., "Bibliography on School Hygiene," *Proceedings of the National Education Association,* 1898, pp. 505-523.

A survey of the literature of the period written in English leaves one with a wholesome respect for the bibliography compiled by Dr. Burnham. There is no doubt that his list includes the relatively most important contributions of the period on school hygiene in English and American literature. The 383 titles of books and articles on school hygiene, the 23 periodicals carrying studies on school hygiene, and the 30 reports on school health problems which Burnham lists, indicate the attention given to school health problems in the period which the literature covers.

Where problems of school hygiene were adequately handled in English, such contributions were recognized in the bibliography, as the 153 American titles and the 73 British books and articles give evidence. Certain phases of the subject, however, as fatigue of school children, study of legibility of print, sanitary inspection of schools, medical examination of school children, and school baths received more attention in Europe, as the 128 German titles, 21 French, and 8 Italian titles indicate. Reports in English of these contributions are available.

Toward the close of the century there was a marked increase in the number of American contributions. Table 1 may be helpful in giving the reader a better picture of the rapidity of the increase. As the 15 European titles and the 13 by American authors, published before 1875, cover a very extensive period of time, they were not included in this table.

TABLE 1

EUROPEAN AND AMERICAN CONTRIBUTIONS TO SCHOOL HYGIENE WITHIN THE LAST QUARTER OF THE NINETEENTH CENTURY

Based on the number of titles included in Burnham, "Bibliography of School Hygiene"

Time Period	Number of Titles	
	European	American
1875-1889	75	40
1890-1894	79	40
1895-1898	61	60

A further study of American titles in the same bibliography indicates not only a wider range of subjects treated, but also a decided increase in the number of studies in any one subject after 1890. This is clearly shown in Table 2.

TABLE 2

SUBJECTS COVERED IN THE AMERICAN CONTRIBUTIONS TO SCHOOL HYGIENE IN THE NINETEENTH CENTURY AND THE NUMBER OF CONTRIBUTIONS ON EACH SUBJECT APPEARING BEFORE 1890 AND AFTER 1890

Based on Burnham, "Bibliography of School Hygiene," 1898

Subject	Number of Titles	
	Before 1890	After 1890
Growth and Development of Children (including measurement)	10	21
School Hygiene (general)	6	9
Heating and Ventilation of Schools	4	11
Vision Defects among School Children	4	9
School Building, Including Sanitation	3	9
Play and Physical Training	3	9
Examination of School Children	—	5
School Furniture, Desks, etc. (Not included in the more general titles)	—	6
Total	30	79

Between 1890 and 1899, American contributions to school hygiene were encouraged by the rise of a group of periodicals[5] sponsored by leaders in the educational field. This period also marked the beginning of two series of studies—those from the Yale Psychological Laboratory[6] in 1893, and the University of Iowa Studies in Psychology[7] in 1897. In 1892, The Pedagogical Seminary published its School Hygiene number. Practically the

[5] *Educational Review,* 1891; *Pedagogical Seminary,* 1891; *Psychological Review,* 1894; *Child Study Magazine,* 1895; *American Physical Education Review,* 1896.

[6] Gilbert, J. A., "Research on Mental and Physical Development of School Children," Studies from Yale Laboratory, 1895.

[7] Gilbert, J. A., "Researches upon School Children and College Students," *University of Iowa Studies in Psychology,* Vol. 1, 1897, Article I.

entire issue was devoted to articles and editorials bearing on the problems related to the health of the school child. In the same period, the Reports of the United States Commissioner of Education included articles by Americans and Europeans on problems of school hygiene and the first Office of Education[8] survey of state legislation as it affected the sanitation of schools.

Between 1890 and 1899, there were not fewer than twelve studies on the growth of children made and reported by Bowditch or his students, Boas, West, Porter, and Burke. At the meeting of the National Education Association in 1898, nine papers were presented on different phases of school hygiene, covering ventilation, lighting, sanitary inspection of buildings, medical inspection of school children, the effect of school furniture on the health of children, and the hygiene of the school day. The papers appear in the published proceedings of the meeting. In this decade, also, Dresslar's contributions on the hygienic aspects of school buildings began to appear.

Within the last quarter of the nineteenth century some very excellent lines of research were begun and ideas on school hygiene in America began to take definite form. From Bowditch's laboratory came the first study of the growth of children,[9] the nucleus around which has grown the great body of scientific literature on child growth and development. Bowditch's study on the indefatigability of nerves[10] gave direction to Burnham's thinking on the hygiene of the school day. Through his constant scrutiny of school procedures in the light of principles of hygiene, Burnham[11] made at this time a sound beginning of

[8] Clark, Hannah, "Sanitary Legislation as It Affects the Schools," *Report of the U. S. Commissioner of Education,* Vol. II, 1893-94, pp. 1301-49.

[9] Bowditch, H. P,, "Growth of School Children," *Report of the State Board of Health of Massachusetts,* Vol. VIII, 1877.

[10] Bowditch, H. P., *"Ueber den Nachweis der Unermudlichkeit des Sangethiernerven," Archiv. f. Anat. u. Physiol.* (Dubois-Reymond) 1890. Reviewed in the *American Journal of Psychology,* Vol. III, 1890-91, p. 556.

[11] Burnham, William H., "The Hygiene of Home Study," *Pedagogical Review,* Vol. 12, 1905, pp. 213-30.

what later developed into a body of literature on the mental hygiene aspects of school procedures. Lincoln[12] in his reports of sanitary surveys of school buildings and school life stimulated lines of action which have found expression in a score or more of national organizations, the reports of which deal definitely with specific problems of school health. The published reports dealing with the medical inspection of Boston school children, in 1894,[13] furnished the impetus for the medical inspection and later the medical examination of school children in other cities, and the flood of reports and evaluation which followed. Despite the tenacious clinging to the carbon dioxide theory, voluminous garments and hour-glass figures for women, the "gay 'nineties" and the years just preceding gave to America a significant body of literature on school hygiene. A review of this literature justifies the belief that the appreciation of its importance will increase as time goes on.

The Growing Conception of a Comprehensive School Health Program, 1876-1930

In its modest beginnings in this country, the school health program had as its chief objective the protection of school children from two recognized dangers—fire hazards and the poisonous effects of a concentration of carbon dioxide in the air of the classroom. The progress from that narrow, utilitarian purpose to the present-day understanding of what is involved in a program of healthful living for school children has led into many byways, and the program itself has been subjected to a variety of influences.

It is with those influences, as they are reflected in the litera-

[12] Lincoln, David F., "Sanitary Conditions and Necessities of School Houses and School Life," *Lamb Prize Essay,* American Public Health Association, 1886, pp. 63-68; Lincoln, David F., "Hygiene of the Public Schools of Massachusetts," 1879; Second Annual Report of the State Board of Health, Reprint No. 43, 1882, Albany, New York.

[13] Arnold, H. D., "Some Results of the Medical Inspection of Schools in Boston," *Report of the United States Commissioner of Education,* Vol. II, 1897-98, pp. 1494-99.

ture of the period, that this section will deal. The school health literature of the period readily falls into three general groups which might be considered as follows:

Attempts to report, evaluate, and interpret the findings of scientific research related to some phase of school hygiene, or the operation of specific school health standards in a supervised situation. For the most part these dealt with research and practice in school hygiene in Europe.

Attempts to discover and report the operation of school health standards in American schools, or to determine statewide trends in school health practice through the study of school health legislation and state regulations on school health.

Attempts to evaluate, select, organize, and interpret a body of school health standards, to the end that the public-school leaders might have a better understanding of the school's responsibility for the health of school children.

No attempt will be made to review a mass of literature at this time. This section is concerned rather with the influence reflected in selected contributions which are representative of one or another of the groups defined above.

Interpretative Reports on European Investigations and Practices in School Hygiene, 1890-1920

In the scientific laboratories of Europe, experimentation and investigation made rapid strides during the second half of the nineteenth century. School hygiene came in for its share of attention. Definite researches were reported that seemed to cast a reasonable doubt on the desirability from a health standpoint of some of the school practices and conditions that heretofore had been taken for granted. Weber had been successful in measuring the amount of light on desk tops and through a series of tests had reached a conclusion regarding adequacy of light in the classroom. Javal, Weber, and Cohn, independently and through measures and tests, established standards for the printed page—size of type, leading, and interlinear space, favoring increased legibility and the reduction of possibilities of

eye-strain. Eulenberg and Bach, on the basis of measurements made by Geissler and Uhlitzsch on 21,173 children between six and a half and fourteen and a half years of age, recommended that school seats and desks should be constructed to fit the individual child. Interest in the problem of the fatigue of school children ran high, and the investigations of the factors thought to favor fatigue were undertaken by Griesbach of Mühlhausen, Kraepelin of Heidelberg, Kemsies of Berlin, and Leo Burgerstein of Vienna. These studies resulted in definite recommendations regarding the shorter school day, the introduction of a mid-session recess, frequent change of activities during the session, the reduction of home-work, and a general suggestion that an effort be directed toward reduction of tension in the schoolroom.

School hygiene in practice in Europe had gone even faster than had research. Medical inspection of school buildings for sanitary reasons, medical examinations of school children, the correction of remediable physical defects, programs of coöperation with the home to further the interest of the home in medical attention to the child, school baths, and various and sundry practices were introduced, or discarded, with the view of improving the hygienic conditions of life at school.

The best reports in America of the European investigations included an interpretation of the findings of those investigations in terms of school health standards for American schools. Likewise the discussion in American literature of school hygiene practice in Europe and the operation of school health standards there led to an evaluation of the standards and practices in the light of their suitability for meeting the needs of the schools in this country.

The most thoroughgoing treatment in American literature on the subject of European research and practice in school hygiene is to be found in a series of twenty studies made by Dr. William Burnham,[14] at that time Professor of Hygiene at Clark

[14] The titles are listed in "A Bibliography of Early Contributions to the Literature of School Health Standards," pp. 39-45.

University. The studies began in 1892 with "Outlines of School Hygiene"[15] which dealt with a wide range of problems related to school health and with the European research basic to the proposed school health standards.

Dr. Burnham's willingness and ability to interpret the contributions made by scientific research to the fields of school hygiene furnished a body of material well suited for use as the foundation of the school health program. It also resulted in a fund of valuable historical data on early school health standards in America. His interest led him to investigate promptly the published reports of school hygiene practices in England, Germany, and France, as well as published addresses of the European and International Congresses on School Hygiene. Within a month or two after the date of the publication of a report or an address on school hygiene in Europe, Burnham presented to America a thorough-going review of the question under consideration, together with an appraisal of specific school health standards involved in the light of their suitability for our schools.

In this way a body of school health standards grew up in America. One at a time, such standards as those dealing with "school baths for children," "length and frequency of recess periods," "health examinations for school children," and "mental and emotional aspects of school health" found their places side by side with the earlier standards that dealt specifically with the sanitation of school buildings. With the increase in number and scope of standards under consideration, the conception of the school health program broadened. Practice began to reflect the interest the subject was receiving in literature. New standards in operation in American schools begat new interest, and some of the standards gained enough acceptance to find their way into state laws and regulations.

[15] Burnham, William H., "Outlines of School Hygiene," *Pedagogical Seminary,* Vol. II, 1892. pp. 9-71.

Inventory of Standards in Operation in American Schools, 1867-1930

With the growing interest in child health and an increased promotion of school hygiene, there developed another type of investigation related to school health standards. In it is represented the American tendency in education to take inventory. It includes those investigations concerned with the discovery of the presence, or absence, of desirable health practices or standards in the schools, and those concerned with the extent of state legislation and state regulations related to school hygiene.

School Health Surveys, 1867-1930

To one familiar with the "survey" tendency in this century, the necessity of finding some means of limiting the number of studies for consideration will be apparent. After a wide reading among school surveys, it was decided to consider only those specific surveys that were nation-wide in scope. That limited the main consideration to the *Biennial Surveys of Education* by the Office of Education in Washington, and special studies sponsored by that office. That the approach of the public health group to the school health survey might be available for a comparison with the educational approach, "A Health Survey of Eighty-Six Cities" was added. A cross-section of the mass of school surveys of recent years and the findings of these surveys regarding present practices in school health is presented in "An Analysis of School Health Surveys," a study made by Dr. Jesse Sears, of Leland Stanford University, for the recent White House Conference. The reason for including this study is obvious.

From the first report of the United States Commissioner of Education, in 1867-68, to the Biennial Survey of Education (appearing as *Office of Education Bulletin,* 1931, No. 20 and a supplementary Office of Education Pamphlet, 1931, No. 21), the Office of Education has periodically reported upon the status and problems of school hygiene in this country.

More often than not, these studies went beyond the mere collection of data through the use of questionnaires, and not only indicated trends in school hygiene in this country, but made recommendations for improvement. The Office of Education has also undertaken the task of making brief reports of scientific investigations which throw light on school health problems. For the sake of brevity, only the earliest and the most recent reports will receive attention here.

The first report of the Commissioner of Education (1867-68) devoted much attention to the problem of school buildings and used woodcuts of buildings and details of floor plans and heating and ventilating equipment to illustrate points made. Two articles[16] which probably reflect the general opinion of what was considered desirable in a school building are included in this report. The authors discussed the school building standards in operation in two large cities of the country. The site of school buildings, construction to reduce fire hazards, heating and ventilating, school desks, water supply, and toilet and hand-washing facilities for teachers and pupils were among the school health standards receiving attention.

The same report contains a copy of the circular from Commissioner Barnard, set up in questionnaire form, which makes a rather detailed inquiry into the community facilities for outdoor play and recreation. The definite information requested on the site, beautification, and care of local burying grounds and the favorable uses made of them as places of recreation indicate the recognition of the need for providing play space for children. The interest of the period in health standards related to school furniture and equipment is reflected in a table, in the 1872 Report of the United States Commissioner, showing the patents issued in that year on "Improvements in School

[16] Philbrick, John D., "Plans of Boston Grammar School Houses," *Report of the U. S. Commissioner of Education,* Vol. I, 1867-68, pp. 522-52; Shippen, Edward, "Improvements in Plans and Construction of Public School Houses in Philadelphia," *Report of the U. S. Commissioner of Education,* Vol. I, 1867-68, pp. 601-12.

Furniture and Ventilation." In that year, fifteen patents were issued on school desks and six on improvements in ventilators.

In 1931, the Office of Education[17] reported in detail the school health standards in operation in American cities of different population groupings. The report is based on responses made to a questionnaire sent out from the Office of Education in February, 1930. The report includes: present practices in administration of school health activities; health examinations, their frequency and the professional status of the examiner; examination of teachers; the control of communicable disease-detection, isolation, and immunization; corrective work; nutrition, including open-air schools and supplementary feeding; physical education from the standpoint of facilities and supervision of play; and health education and mental hygiene. This pamphlet supplements the *Biennial Survey*[18] published the same year. The *Biennial Survey* considered these aspects of the school program from the standpoints of the legislation and the regulations of the states, as well as the responses to the questionnaire. This survey indicates a country-wide increase in the introduction of health activities into school programs since 1923. The study suggests, however, that nutrition classes, as such, and supplementary feeding appear to be decreasing.

A type of school health survey approached from the point of view of public health is described in "A Health Survey of Eighty-Six Cities."[19] The survey reported in this study was conducted by the research division of a national organization interested in child health. The techniques used were for the most part those developed and used by the American Public Health Association. In addition to the Appraisal Form for

[17] Rogers, J. F., "School Health Activities, 1930," *Office of Education Pamphlet,* No. 21, 1931.

[18] Rogers, J. F., "School Hygiene and Physical Education," *Biennial Survey of Education,* 1929-30. *Office of Education Bulletin,* No. 20, 1931, Ch. X.

[19] Palmer, G. T., *A Health Survey of Eighty-Six Cities,* American Child Health Association, 1925.

Health of the School Child,[20] the survey staff had a questionnaire[21] prepared for the purpose of ascertaining the health practices of school children in the cities studied. The declared purpose of the study as a whole was to secure a basis for an intelligent understanding of the status of child health work in the country. "It was recognized," the report states, "that the information gathered must embrace all the health promoting activities, official and unofficial, of the entire community before an intelligent grasp of the child health work could be secured."[22]

The study covered the 86 cities constituting the 40,000 to 70,000 population group in the 1920 United States Census. In each of these cities, scattered through 31 states, the survey staff spent about 5 days. The questionnaire was given to one fifth-grade class in each school visited, and responses from 35,000 children were received, an average of slightly more than 400 children to a city. The investigators expressed confidence in the reliability of the answers.

The summary of the findings of the survey presented in the report reveals that 69 of the cities provided medical service, 84 had some nursing service in the schools, and that there was an almost universal provision for some kind of physical examination or inspection. The examination, according to the report, tended to be superficial; two minutes were given to a child in 35 cities. There was a lack of standardization of examination procedures, and in methods of securing correction of defects; and also a lack of efficiency in the inspection of children by teachers to detect early signs of communicable disease. Sixty-five cities had begun to give health teaching an important place in their schools.[23]

The recommendations which are significant include a thorough and complete physical examination of each school child, some time in his school career. The examination should be edu-

[20] *Op. cit.*, p. 195.
[21] *Op. cit.*, p. 158.
[22] *Op. cit.*, p.5 .
[23] American Child Health Association, *op. cit.*, p. xiv.

cational in character, interpreted to parent and teacher, and carefully followed up by teacher and nurse to secure maximum results. Standardization of examination procedure would make possible the comparison of findings and results; health training and instruction should be developed with a balance between sound basic instruction and stimulation of proper habit formation. The construction and maintenance of buildings with regard for the hygiene of the school child is essential, with special attention to adequate lavatory and toilet facilities, adequate play space near the building, provision for proper classroom lighting, and the maintenance of cool temperature and adequate ventilation in the classrooms.

A study of the scores given to the several parts of the community health program, including the program on school health, yields some interesting information. In 13 cities the major part of the community health program, exclusive of school health, received a score of *High;* in 6 cities, the major part of the program was scored *Medium;* and in 12, it was scored *Low.* In the remaining 55 cities, not more than one-half of the community program, exclusive of school health, received any one score. Where the major part of the community program scored high, there was a decided tendency for the school health program to secure a corresponding score (10 school programs out of 13 scored high); where the major part of the city program scored medium, only one-half of the school programs had a like score; and where the major part of the community program scored low, there was a pronounced tendency for the school health program to score higher than that of the community.

So far as the cities studied were concerned, a good school health program was frequently associated with a good community health program. That there was a tendency, also, for school and city health programs to develop independently is indicated in the association of the remaining 18 school health programs receiving a score of *High.* Nine were in cities where not more than 4 other phases of the community received as

good a score; and 4 in cities where only 3 other phases had a like score. One school health program with a score of *High* was in a city where 8 phases of the general program scored *Medium,* and 2 others in cities where 8 and 5 phases respectively of the larger program scored *Low.* The remaining 2 school programs were in cities where the distribution of scores was relatively even.

This very interesting report does not analyze the relationships between the school health program and the community health program as a whole. Whether a relationship does exist and just what it is, the report does not make clear, but the proposal for a community health program, including school health, proceeds as if the relationship had been established. It is possible that the task of removing the obstacles which prevent the discovery of the existing relationships, or the establishment of new and desirable relationships awaits further study and experimentation.

Sear's[24] study of school health surveys represents an initial attempt on a large scale to scrutinize the school surveys of the 20 years just preceding 1930, to determine what they yield in evidence related to the operation of school health standards in the field. The study covered a fairly representative list of 137 general surveys, including many aspects of the school system, and 74 special surveys dealing with buildings or test programs. The surveys were undoubtedly representative, and according to Dr. Sears, ". . . certain to exemplify the services rendered by school surveys, during the two decades covered by the study."

The investigation consisted of subjecting the selected surveys to a scrutiny with respect to the survey techniques used; the sources of information consulted; the findings of the surveys as they relate to school health; and the survey recommendations for the improvement of the program. The survey findings

[24] Sears, Jesse B., "An Analysis of School Health Surveys," included in the *Report of the Sub-Committee on School Health Surveys,* of III-C, Committee on the School Child, White House Conference. *MS.*

were assembled and classified as administrative organization, school plant facilities, medical service, health instruction, physical education program, cafeteria and food service, and special care of under-privileged groups.

The following résumé presents in general the summary of the findings of surveys in Dr. Sear's study.

The administrative and plant facilities were often found to be quite inadequate. The reports of medical service show that the idea of offering treatment has grown. Curriculum studies of the surveys have not given much attention to the subjects of hygiene or to the practical activities designed to develop health habits. Physical education is accorded more space than other phases, such as nutrition, which receives much less attention than its importance warrants. The discussion of the provision for the under-privileged is quite limited in some surveys, but rather well treated in others.

The study contains some excellent tables presenting evidence gleaned from surveys grouped to cover five-year periods. These present data separately for city surveys, county surveys, and state surveys. While the study was planned primarily to determine how the survey did its work, what it found in the schools, and what recommendations it made, it presents a fairly good picture of the status of the school health program during the two decades covered by the study.

Dr. Sear's summary, as it relates to the school health program, indicates that the health programs as reflected in the county surveys are woefully lacking; that in the comprehensive state surveys, health has not been one of the largest interests nor has the treatment been at all comprehensive; the feature of the school survey that brings to light the children's health needs is far below the average; practically all the best ideas are in effective practice somewhere; but nowhere is the plan complete or at all perfectly administered.

The study just cited furnished an important part of the basis for the summary offered by the Sub-Committee on School

Health Surveys of the White House Conference.[25] The summary of that committee stresses the following:

The need for a set of working standards for the comprehensive school health program.

Further development of quantitative standards and survey instruments, and better trained survey staffs for the study of the school health program.

A thorough survey of all available health data at regular intervals, not less frequently than once in five years, and these to be supplemented by special studies, sometimes annually, of specific phases of the school health program, with a view to the constructive formulation and revision of comprehensive programs of school health.

In this connection it is pertinent to refer to "School Health Appraisal,"[26] a lengthy and fairly comprehensive set of working standards on school health programs, accompanied by a corresponding check-list placed in close proximity to the section of working standards it purposes to check. This set of standards has been used as a guide for students in the educational institution by which the set is issued. Up to the present time, there has been no published report of its use either in setting up a school health program or in surveying such a program.

Legislation and State Regulations Related to School Health Studies of State-Wide Trends, 1894-1930

At intervals, the Office of Education has compiled and published information regarding the existing state laws and regulations on school health. The reports represent an attempt to get a nation-wide picture of legal provisions for the school health program. They probably give a fair representation of the scope and content of the school health program generally recognized as essential in the period which the report covers.

[25] White House Conference: "School Health Surveys," *The School Health Program,* New York, Century Co., 1932, pp. 272-289.

[26] Turner, C. E., *School Health Appraisal,* Cambridge, Massachusetts Institution of Technology, 1926.

Three of these reports, wider in scope than the others, and so spaced in time as to cover a period of 36 years, give a fairly good picture of the changes in public concern over the problem of school health. In 1894[27] only 17 states had laws relating to any phase of school hygiene. Most of these were requirements related to cleanliness of the buildings or of the children. There was some attempt to control contagions through laws requiring the vaccination of school children, or providing for the exclusion from school of children sick with contagious diseases. A few states required fire protection for school buildings, and two prohibited nuisances in the vicinity of the school. Five states had laws on the ventilation of schools, but only two (Massachusetts and Connecticut) presented standards of ventilation. One state only (Kentucky) regulated the lighting of the schoolroom, and the amount of floor space per child, or specified that the school seats must fit the child. The investigator concludes this early report with the statement: "With limitations, existing legislation is along the right lines. Future progress may be expected to be extension, not reform."

The 1915 report[28] covered sanitary legislation and regulations related to school buildings and grounds in 36 states. While existing in only one-fourth of the states studied, provisions for cleaning the school had become specific and included frequency and methods of cleaning and floor treatment. In the matter of fire protection, a blanket provision was the rule, although some states specified construction, corridors, inner stairways, exits, etc. The state provisions against nuisances had increased from 2 to 18. Ten states had legislated on school desks, but Minnesota was the only one to require single desks, and Indiana the only one to provide that at least twenty per cent of the desks in any room should be adjustable. Half the states had prohibited the common drinking cup, and seven had legislated against

[27] Clark, Hannah, "Sanitary Legislation as It Affects the Schools," *Report of the U. S. Commissioner of Education*, 1893-94, Vol. II, pp. 1301-49.

[28] Cook, W. A., "School House Sanitation," *Office of Education, Bulletin* No. 21, 1915, p. 69.

the common towel. One third of the states required the provision of school toilets; three of them (Ohio, Indiana, and New York) specifying that they be indoors and establishing a ratio of 1 toilet bowl for 15 girls, and 1 for 25 boys, with 1 urinal for 15 boys. Minnesota required that water for hand washing be provided in each toilet. Another change was evident in the increase of provisions for school lighting. Thirteen states specified a ratio of glass area to floor area, but the ratio varied from 1:4 to 1:10; 12 of the 13 states provided for lighting from the left or from the rear; and 7 specified the height of the windows. The ventilation laws had become more numerous and much more specific: 14 states specified floor space per pupil that varied from 12 to 35 sq. ft.; 17 required that the air space per pupil be somewhere between 200 and 250 cubic feet; 10 set the average classroom temperature at 70 degrees; and 21 specified that the minimum air supply per minute per child be 30 cubic feet.

The most recent report on legislation, "State-wide Trends in School Hygiene and Physical Education," published by the Office of Education, differs in scope from the preceding studies, in that it omits the study of buildings and includes physical education. The report gives a good picture of the status of the medical health service phase of the program in so far as the standards related to it have crept into the laws and into state regulations. It also discusses briefly the legislative provisions and state regulations on health education in the schools.

Summarized briefly, the legislative provisions for the medical and nursing phases of the school health program are as follows: 38 states either permit or require the examination of school children for physical defects. Some of the provisions may include mental examination as well; one state specifies that the mental examination be included. Twenty of the states require that the physical examination be annual. Seven states require that the teacher participate in the examination, usually for vision and hearing testing, but Massachusetts is the only state that provides by law that the teacher training school pre-

pare the prospective teacher for that work. Eleven additional states include the teacher as one of the examiners. The physician is specified as the sole examiner in 5 states; the county health officer in 3; and 20 states mention the physician as one of the examiners.

In 10 states the examination is limited to some combination of vision, hearing, nose and throat, dental examination, and breathing; while in 15 states the provisions are for a more general examination.

The legislation on health education is largely limited to the provision of the minimum amount of time which a school is required to spend each week on the teaching related to health information or health practices, and to the requirement that subject matter related to the physiology and hygiene bearing on alcohol and narcotics be a definite part of the hygiene teaching. However, many state regulations include rulings on courses of study in health education.

From the data surveyed, it would appear that the advance in state-wide trends, as far as school health was concerned, lay in the increase of facilities and equipment that influence healthful living in the school, improvement of sanitation, and care of the building, more concern over the construction of buildings for protection from fire hazards, and in the conservation of vision. The influence of the early concern over the presence of carbon dioxide in the classroom is reflected in the provision regarding the air supply of 30 cubic feet per minute. From a review of the foregoing studies, it appears that legislation on matters of the health of school children has progressed steadily in the past forty years. From the first there has been a strong tendency to make some of the laws specific, and the specificity has not always operated for the best interests of child health. All recent studies of legislation related to child health have cited the law requiring that 30 cubic feet of air be furnished each minute for each child in the classroom, as an example of laws that are too specific. There may be other laws, the revision of which might be an aid in the improvement of the health pro-

gram, but the studies on legislation relating to health of school children do not mention them.

Organization and Interpretation of Working Standards on School Health for Guidance Purposes

The Beginning of Coöperative Effort, 1910-1930

Another type of school health literature has made a place for itself in the past quarter of a century and has found favor with school administrators, school hygienists, and other school health workers. It is the report of an attempt in conference or committee to consider existing school health standards, informal studies of procedures, school health problems as reflected in survey reports, and evidence and conclusions revealed in scientific research related to school health problems. In these conferences, values were weighed, judgments pooled, group decisions reached, and the report issued with a view to clarifying some of the problems of school health, and interpreting school health standards to the administrators and teachers of the public school.

The report of the conference, like the conference itself, has been a coöperative affair made possible through the participation of representatives of various educational institutions, professional associations, and organizations definitely interested in promoting some phase of child health. Among the most important of these are the *Ninth Yearbook* of the National Society for the Study of Education and the reports of studies made by the National Child Health Council, the Joint Committee on Health Problems in Education of the National Education Association, and the American Medical Association, a series of National Conferences on Health Education, and the White House Conference on Child Health and Protection.

No discussion of the organization and interpretation of working standards for school health programs would be complete without a consideration of Burnham's "Outlines of School Hygiene" described earlier in the present study. It was a masterly attempt to guide educational leaders to understand their re-

sponsibility for the health of school children, and should be recognized as the earliest effort in this country in the guidance of educational thought in the direction of school health.

The next attempt appears under the title, "Health and Education,"[29] a study made by Dr. Thomas D. Wood, Teachers College, Columbia University, at the request of the National Society for the Study of Education, and accepted by the Society at its annual meeting in Indianapolis, February, 1910. The only claim that "Health and Education" has to consideration as a coöperative undertaking is its authorization by the Society, and its later adoption by the Society as its annual report. It did serve, however, in 1910, the same purpose that Burnham's study served in 1892, that of directing the attention of educators in general to the responsibility of the school for the health of the school child. It marked, also, the beginning of an activity which reached a high point as a coöperative enterprise in the White House Conference.

The purpose of Wood's study, as stated by the author was: "To present a synopsis of the different phases of educational administration, supervision, and instruction that have to do with health, for the consideration of the teacher and general educator."[30] The standards which Wood selected and presented were based on reports of earlier scientific studies, reports of school health practices in Europe and America; results of studies by the author on the weight and height increases of 900 school children observed throughout their elementary career; and a questionnaire study of practices in school health activities in 136 cities of the country in the population group above 30,000. In his discussion of the selected standards, Wood indicates the relation of each to one or the other of five aspects of the school health program, and offers practical suggestions for the administration and supervision of the program.

[29] Wood, Thomas D., "Health and Education," *Ninth Yearbook of the National Society for the Study of Education,* Part I, Bloomington, Ill., Public School Publishing Co., 1910.

[30] *Op. cit.,* p. 8.

This study marks the initial step in a coöperative attack on the problems of school health. Its importance lies in the fact that it is also the initial presentation of five aspects of the school health program, and as such marks a stage in the development of the comprehensive program of school health.

In 1919, the second study appeared as a report of the Committee of the School Child of the Children's Bureau Conference on the tenth anniversary of the First White House Conference.[31] The purpose of the report as stated was: "To present a statement of standard requirements for the health and protection of school children." This is one of the early attempts to formulate quantitative standards. While they were set up as requirements, their use has been largely limited to that of serving as a working basis for the setting up of a program. The selection of the standards themselves was made mainly through the use of "expert opinion"[32] of the specialists called into conference for that purpose. The standards were formally adopted by the Children's Bureau Conference in Boston, in June, 1919. The importance of this study lies in the fact that it is the first published statement of school health standards representing a consensus of opinion of a working committee to be endorsed by a national conference.

In 1922, in the report of the Annual Meeting of the American Public Health Association,[33] there appeared the report of a committee instructed to prepare a school health program for the association. It included a set of working standards for a school health program, which, though stated briefly and in general terms, covered a fairly comprehensive list of health activities including sanitation of the school building; examina-

[31] Children's Bureau, "Minimum Standards for Protection of School Children," *Standards for Child Welfare,* Children's Bureau Conference Series, No. 1, Children's Bureau Publication, No. 60, Department of the Interior, 1919.

[32] Turner, C. E., "Personal and Community Health," St. Louis, C. V. Mosby Co., 1926, p. 23.

[33] Turner, C. E., "Health Program," *American Journal of Public Health,* March, 1922, p. 296.

tion of children, physical and psychological; communicable disease control; correction of defects with follow-up by the school nurse; special classes for sight conservation and others; public clinics for the correction of defects of indigent children; and health promotion through hygienic arrangement of the daily school program, play activities, and health instruction for child, teacher, and parent. The standards are practically a restatement of those formulated three years earlier by the Children's Bureau, and the importance attached to their use in the report lies in the fact that the American Public Health Association adopted the standards proposed by another organization. This marks another step in *securing a consensus of opinion on a group of standards for the school health program.*

In 1923, the Office of Education published "Health for School Children,"[34] a study by the Advisory Committee of the National Health Council. The purpose of the study was: ". . . to show the elements of a school health program; and to help community leaders to see that their school health work is balanced and sound, that standards for it are high, and that the component parts are related not only to each other but to the whole educational process."[35] A wide range of working standards is advocated for the guidance of those engaged in school health; but there is no explanation of the basis used in the selection of the standards recommended. The absence of such a statement suggests that probably the group selected those standards that, in the judgment of the participating child health specialists, seemed desirable and workable, and that the decisions were based on field experience. Footnotes[36] indicate some of the challenges offered to standards and to suggested procedures. Undoubtedly many of the standards offered, represent compromise, and, to that extent, agreement.

Like the two studies just preceding it, "Health for School

[34] National Health Council, *Health for School Children,* Office of Education, 1923.

[35] *Op. cit.,* p. 5.

[36] *Op. cit.,* pp. 6, 7, 23, 24.

Children" represents the use of empirical method of selecting school health standards, as opposed to the practice followed by Burnham and Wood of accepting only those standards supported by the findings of research or those that had successfully operated in supervised situations. The study went beyond the two just preceding it, however, in the explanation and discussion of values of the standards proposed. It went beyond all previous studies in the scope of the school health program, by frankly advocating mental hygiene in the schools through preventive measures, and through training in habits of healthful mental activities. "Health for School Children" also marked a higher level of conference studies, in that it presented a consensus of opinion of representatives of sixteen national organizations interested in child health.

Subsequent to its appointment in 1911, the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, under the chairmanship of Dr. Thomas D. Wood, prepared a series of reports on different phases of school health. Inasmuch as these reports paved the way for the 1924 report (revised in 1930), "Health Education—A Program for Public Schools and Teacher Training Institutions,"[37] the latter only will be reviewed at this time. The purpose of the report was expressed by the Chairman in the Foreword, " . . . it is hoped that this report may provide the best available guidance to the schools of the country relative to health teaching in the immediate future." The bases for the selection of standards were given as: the needs as indictated by an analysis of 120 responses to 700 requests for samples of health education materials in use; the consensus of opinion of technical specialists of several fields supported by the findings of available research or satisfactory experience.

[37] Joint Committee on Health Problems in Education of the National Education Association, and the American Medical Association, Thomas D. Wood, Chairman: "Health Education." A Program for Public Schools and Teacher Training Institutions, Washington: National Education Association, 1930, 251 pp.

The report presents fundamental principles for the organization, administration, and supervision of the school health program, together with basic information needed by the teacher and criteria for the selection and use of materials and suggested activities in health education. A significant factor in this study is that it presents a program of school health in which the chief emphasis is education; the standards included are supported either by the findings of scientific research or by the clinical advice of a group of leaders in the technical field involved; and the report represents a consensus of opinion and agreement of the participating members of the conference upon a level more important than that reached by previous studies. The report itself was the coöperative undertaking of educational leaders and school health workers, medical specialists, and specialists in other fields.

The *Fourth Yearbook of the Department of Superintendence*[38] contains a report of a sub-committee instructed to present a plan for a curriculum in health and physical education. The report, "The Scope and Content of Health and Physical Education," brings together in a concise statement the elements included in a comprehensive school health program as conceived and adopted by the groups participating in the earlier studies. Its main purpose was to clarify thinking on the school program through an explanation of the terminology used in the conference studies that had gone before. The importance of this fact should not be overlooked. The contribution does present, with explanations, the terminology related to school health programs and considered appropriate in such use by the national groups participating in the conference studies on school health programs. Another contribution which the report makes is to be found in the simple, yet comprehensive, picture it presents of the school health program. The program described in

[38] Wood, Thomas D., "Scope and Content of the Field of Health and Physical Education." *Fourth Yearbook of the Department of Superintendence.* Washington, D.C., National Education Association, 1926, pp. 223-228.

this report furnished the basis for the organization of "Tentative Standards for A School Health Program," as well as the organization of the standards for the Summarizing Table, facing page 37.

The score or more of college texts dealing with school hygiene or health supervision of schools are purposely omitted from the present study of standards, although most of them are excellent. They are so well known that a discussion of them here would be beside the point. They were used, however, in the task of assembling and stating the school health standards in the present study and are listed as sources for specific standards in the bibliography of sources.

The latest conference study to make a contribution to a better understanding of the school health program was the White House Conference, the reports of which are now coming from the press. The purpose of the conference was not to set up new standards but to serve as a clearing house for those already in existence. The reports indicate the type of service which may be rendered by the conference in scrutinizing old standards in the light of new situations and changing viewpoints regarding education, as well as an evaluation and often a restatement of a standard to clarify its meaning and use, or to identify it more closely with general school procedure. The extent to which it served as a clearing house for standards recognized and accepted in earlier studies is clearly set forth in the Summarizing Table facing page 37.

Summary

A review of the literature on conference studies indicate that this type of study, by serving as a clearing house for existing school health standards, and problems and procedures related to school health, has made a significant contribution to the field. It has been an effective means of resolving differences of opinion; extending the general understanding and acceptance of a wide range of school health standards; and encouraging schools to enlarge their programs and improve the quality of work done.

Explanation of Table 3

The Summarizing Table facing page 37 brings together a mass of data regarding the rise of specific standards and the recognition they received in subsequent literature. The numbers down the left side of the table correspond with the numbers of specific standards in TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM, pp. 207-238. They are used to identify the standards appearing in the table. The description of the standards in the space at the right of the numbers indicates in general the content of the classification or the phase of the program in which the standard may be found. The time periods indicated at the top of the table, with the exception of the first and the last, are expressed in decades. The source of the contribution in which a specific standard appears was classified as the agency, because the use of such a term allowed the inclusion in one group of such contributions as reports general and special, pamphlets, bulletins, circulars, and special studies made under the auspices of the Office of Education within any one period. The explanation of the abbreviations used to designate agencies will be found at the foot of the table. The titles appearing under an agency within a given period of time will be found on pp. 39-47.

In the body of the table are numbers standing alone or in series. These numbers identify specific standards which are to be found in a contribution published by the agent and within the period indicated. For example, in the decade 1890-99 and under the column headed "Burnham" the number 84 appears. This means that Standard No. 84, which provides for a winter classroom temperature ranging about 68° was recognized by one of Burnham's contributions made in the decade 1890-99.

The table reflects the rise and subsequent recognition of a specific standard; the fact that the range of standards approximates a comprehensive school health program; the relative emphasis on phases of the program within different decades; and the fact that certain agencies acted as clearing houses for the great mass of standards. This table is an abstract of a com-

TABLE 3

SCHOOL HEALTH STANDARDS RECOGNIZED IN SELECTED STUDIES MADE BETWEEN 1867 AND 1931

Time Periods in Which Specific Studies Were Made, the Agency Responsible for the Studies, and the Standards Recognized in the Studies

Item Nos.	Description of Items Included	1867–1889	1890–1899		1900–1909		1910–1919					1920–1929								1930–1931	
		(a) Office of Ed.	Office of Ed.	(b) Burnham	Office of Ed.	Burnham	Office of Ed.	Burnham	(c) NSSE	Chil- (d) dren's Bureau	Sears (e) Survey	Office of Ed.	Burn- ham	(f) ACHA	(g) APHA	Natl. (h) Ch. Hlth Council	(i) MIT	Joint (j) Comm.	Sears Survey	Office of Ed.	White (k) House Conf.
1–2	Administration of the School Health Program the Responsibility of Educational Authorities				1		1		1–2		1	1		1		2		1, 2	1	1, 2	1, 2
3–11	Health Examinations Including Scope, Frequency, Thoroughness, and Examining Personnel		3–5		3–4	3–5 11	3–5 11	3–4 8, 10	3–8 11	3, 8 9	3, 8 9	3–5 11		3–7 11	3–9 11	3–11	3–5	3–10	3, 8 9	3–5 11	3–11
12–18	Correction of Defects Including Promotion by Education, School Remedial Service, and Records					12–16	12–13	15, 17	12, 15 17–18	12, 13 15, 17	12–17	12, 15 18		13–18	12–17	12–18		13, 15 16–18	12–17	12, 13 15, 17	12–18
19–25	Adjustment to Meet Varying Needs Including Changes in Program, Special Classes, and Curricula				20		20, 25			20, 24 25	20–22 24–25	19–24			19–20	19–25		19–22 24–25	20–24	20, 25	19–25
26–38	Control of Communicable Disease Including Detection, Exclusion, Readmission, and Immunization		26–27 29–32 35		26–27 30, 35	26–27 30, 34	35	27, 34 35	26, 29 31–32 34	35–36		27, 31 35–36		26–38	26–27 31 35–38	26–31		26–32 34–35		26–27 35	26–32 34–38
39–66	The School Plant: Site, Construction, Fire Protection; Classroom Lighting, Furniture, and Space per Pupil	39–44 48, 50 56–64 66	39–41 43–51 54 56–65	39–41 43–44 46–48 50, 57		39–41 43–44 46–49 51–52 57–58 60, 62–65	40–41 46–48 51–55 57 60–62 65		39–41 43–44 60–62 64	39–41 44		39–48 58–62		56–64	39–41 43 60–62 64–65	39–41 43–44 47–48 50–51 54–55 58–66	40–41 43–49 51–53 55 58–60 62–68	39–41 43–45 50, 52 56 59–66		41–42 50, 57	39–65
67–75	School Facilities: Drinking Water, Handwashing, Bathing, and Toilet; Facilities and Provision for Play	67–69 71–73	68, 71–72	71–75		67–72 75	67–72 75		67–68 70–71 74	74	74	71–73 75		67–75	67–71 73–74	67–74	67 69–73	67–74	74	74	67–75
76–88	School Equipment and Care: Cleaning, Heating and Ventilating	83–88	76–80 82 84–88	76–81 84 86–88	88	76, 78–81 83–87	76–82 84, 86	87	76–79 83–85 87–88		83, 85	84 86–88		83–88	76, 79 84–85 88	78, 84 87	78–87	76 78–88	83, 86	84, 86	76–86
89–93	School Feeding: Cafeteria Service and Supplementary Feeding				93		93				89–90	89, 93			89	89–93		89–90 92–93	89–90		89–93
94–123	Hygiene of Instruction: Classification, Arrangement, and Adjustment of School Program, Materials and Methods; Teacher-Pupil Relationships	99–104 111, 114	100 113–114	98–100 102–104 113–117	100	98–103 123	100–101 103, 114	104 111–112 123	98–100 102–108 110–120 123				105	95	98 100–104	96–97 100–103 111, 113–114 118–119 122–123		96–104 107–108 110–117 123			94–123
124–131	Health of Teachers: Examination, Leave of Absence, Teacher Load, and Working Conditions, Rest Room and Living Arrangements	128–129				129, 131	124 128–129		124			124–126 129–130				124–125 128	128	124, 126 131		125	124–131
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The exact reference for a study made by any one of these agencies within any decade will be found under the proper decade in the bibliography on pages 39–47.

The Office of Education, Department of Interior, was known as the Bureau of Education, between 1870 and 1929.

(a) Office of Education, Dept. of Interior, Washington, D.C.
(b) William H. Burnham
(c) National Society for the Study of Education, *Tenth Yearbook*, Part I.
(d) Children's Bureau, Dept. of Labor, Washington, D.C.
(e) Jesse Sears, Ph.D., *A Study of School Surveys* (unpublished)
(f) American Child Health Association
(g) American Public Health Association
(h) National Child Council
(i) Massachusetts Institute of Technology
(j) Joint Committee on Health Problems in Education, National Education Association and American Medical Association
(k) White House Conference for Child Health and Protection, III-C, Committee on School Child

The title and date of each study will be found on pages 39–47

prehensive table in which details are given regarding the rise and recognition of school health standards. In the complete table slight deviations in content and statement of standards are noted. Obviously, it was necessary to sacrifice the detail and precision of statement in the construction of the shorter table.

Summary

The review of the foregoing studies reveals that the interest of educators in the health of the school child definitely increased during the past four decades. The conception of what constitutes a school health program has developed from the narrow utilitarian purpose of offering fire protection and protection from the poisonous influences of carbon dioxide concentration in the air of the classroom to the acceptance of a program of healthful living, wide in scope, with equal importance assigned to the mental, emotional, and physical aspects of health, and with an emphasis upon the educational implications of such a program.

In the nineteenth-century literature there were indicated beginnings of research movements, and lines of thinking, the subsequent development of which has exerted an important influence upon a better understanding of what is involved in the problems of healthful growth and development of children, and the implications of this information for education in general and for the school health program in particular.

The reports of early research and practice in school hygiene reveal the rise of working standards for the school health program, and the fact that these standards were frequently supported by the findings of research. They reveal also attempts to appraise the value of the standards issuing from the reports of the research worker, and those discovered in some of the early programs, as well as efforts to interpret the standards in terms of the needs of American schools.

A review of the studies on legislation and state regulations shows that the advance in statewide trends in school health

consists largely in the increase in equipment and facilities that influence healthful living in the schools; improvement in construction, sanitation and care of the school buildings; more concern over the construction of buildings for protection from fire hazards and the protection of children from eye strain; an increased concern for appraisement and improvement of the physical condition of children; and a recognition of the need for an improved type of health education in the schools.

The tendency to survey programs has grown; and the surveys made by the Office of Education, the American Public Health Association, and other health organizations, and those undertaken by educational institutions reveal wide diversity in methods and approaches in existing programs of school health. They reveal a willingness on the part of school administrators to provide school health programs, but an evident lack of understanding of what constitutes a comprehensive program of school health, and of what relations exist between the constituent elements and the program as a whole, or between the constituents and general education. This seems to call for a set of working standards basic to a comprehensive school program, and the organization of these standards into a program which is comprehensive in scope, educational in character, and sound in practice. The critical study of surveys reveals the need for better trained survey staffs to assume the responsibility of discovering the constitutent elements and appraising the programs in existence; the need for the construction and improvement of survey instruments; and for continuous and regular general surveys of programs, supplemented by special studies of the different phases of the program.

The conference type of study that developed during the past two decades has made a significant contribution by serving as a clearing house for existing school health standards, and for problems and procedures related to school health. It has been an effective means of resolving differences of opinion, extending the general understanding and acceptance of a wide range of school health standards, and in encouraging the schools to

enlarge their programs and improve the quality of work in them.

The literature as a whole yields a wide range of school health standards, many of which are supported by the findings of research, and which lend themselves readily to organization into a fairly comprehensive program of school health; evidence of general acceptance of the standards by educators, school hygienists, and representatives of health and educational organizations participating in the conference studies; a lack of evidence of any real differences of opinion regarding the value of a specific standard recommended in the conference reports (exceptions to these are noted in the text); and the discouraging conclusions that must of necessity be drawn from the findings of the study of surveys, that while effective work on some phases of the program is in evidence, the program as a whole is not to be found.

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PART II

DETERMINING THE STATUS OF ACCEPTANCE OF SCHOOL HEALTH STANDARDS

CHAPTER III

THE PROBLEM

Purpose and Scope of the Problem

In the past, several types of studies have been carried on which relate in one way or another to the health of the school child. Among these have been surveys of state-wide trends in school hygiene; surveys of school health practices in specific situations; researches that deal with specific questions on the health and development of the growing child; studies of environmental factors and school procedures and their influence on child health or child health education; and conference studies on selection, organization and interpretation of school health standards for the guidance of school administrators and teachers. Through these studies and out of them has grown a conception of a school health program, comprehensive yet flexible, which is marked by a recognition of the equal importance of the various aspects of health—mental, emotional, social, and physical.

A consideration of the literature on school health leads to the hope that a survey of the field might yield a picture of the gradual but general extension of school health work, with a distinct trend toward a comprehensive school health program. A recent study of school health surveys covering a twenty-year period reveals the fact that while most phases of the school health program are operating satisfactorily somewhere, the probabilities are that a complete school health program as such does not exist anywhere in practice. The comprehensive school health program, as it exists on paper, presents a sharp contrast with the actual program as found in practice. A sharp contrast between theory and practice is of course not peculiar to the school health program. Nevertheless, in the face of an apparent general acceptance of the wide range of standards among educators and school health leaders, the contrast presented sug-

gests some very definite questions. The first of these questions is: What factors entirely independent of the value of the standard or the recognition of that value by the administrator might operate to prevent the inclusion of the standard in a given school health program?

A survey of a variety of school situations might reveal a good many factors which at a given time interfere with the inclusion in the school health program of a single standard or a group of standards. In the first place, the principle of individual difference is probably not peculiar to individual human beings, but applies as well to communities. It is quite conceivable that in some cities in the formative years, the city fathers foresaw the need of conserving areas for outdoor recreation, and made ample provision for city playgrounds and parks so distributed and supervised that all schools are still well served. In some communities the selection and use of professional health service by the parents has advanced to such a point that practically all the children are under the observation of the family physician and the family dentist, both of whom maintain a coöperative relationship with the school. In these and similar situations in which some phase of the health program is handled outside the school, that portion of the budget which under ordinary circumstances would go into the development of a service, or into the provision of a playground, might be diverted to the development of another phase of the health program, or even to some phase of the general program. Other community factors frequently condition the rate of growth of the school health program. Among these are community customs and prejudices, the educational preparation of the teaching staff and the readiness with which the staff adapts to innovations; the possibilities for in-service training of teachers along special lines; the actual equipment and facilities essential to a given phase of the program and available in the system; and last but not least, the school budgets with their tendency to follow traditional lines. These are factors that operate in some school situations to condition an extension of the school health

program, and which operate independently of the inherent value of a given standard, or independently of the recognition and appreciation of that standard by the school administrator.

Probably the most powerful drive, and the one necessary even for the consideration of a specific standard as a part of the school health program, is the actual acceptance of that standard by the school administrator or by the director of the program. This theory of acceptance suggests that in the mind of a school administrator or of the director of the program there is a firm belief in the fundamental value of certain school health standards, to the exclusion of others; and it further suggests that the standards accepted by the administrator will be the first to appear in the health program in that school. The possibility of the presence of such beliefs, and of such a selective acceptance of standards, raises a series of questions relative to the whole range of school health standards:

Do the persons actually responsible for the direction of school health programs in the field accept the wide range of standards given general acceptance in conference studies?

Do any controversial issues in standards still persist to the point that they seriously influence the acceptance of the standards?

Do accepted standards tend to maintain acceptance throughout a period of time, or indefinitely?

Have controversial items moved into the list of the accepted?

What sort of development is reflected in the list of controversial items in a series of surveys extending over a period of time?

What are the possibilities in the field of research for settling the controversy in relation to a specific standard?

These questions are pertinent to a study of school health standards. To subject all the working standards of a school health program to a critical study in the light of the questions raised, would be a task of proportions that would strain the bounds of a single study.

It is possible, however, to conceive of a series of studies, the cumulative results of which would clarify the general understanding of values of the whole range of standards. It is appar-

ent also that the responsibility of the first of such studies is to open the way for future studies by dealing with the troublesome problems in the school health program at the present time. It is assumed that these troublesome problems are related to the controversial issues involved in the standards, and that it is possible to isolate these issues for consideration.

A restatement of the assumptions just now indicated might serve to clarify the task in the present study. They are as follows:

One of the strongest factors conditioning the inclusion of a standard in the school health program is the belief in the fundamental value of the standard held by the administrator responsible for the program.

Administrators differ in their beliefs regarding any one standard, and the difference of opinion may become so sharp as to constitute a controversy.

Such controversies exist in relation to some school health standards. Otherwise a comprehensive school health program would be found operating in school systems somewhere.

There are available research techniques through which such controversial issues may be isolated for further study.

The critical scrutiny of these issues in the light of the findings of research, and an equally critical scrutiny of the possibilities of research for the settlement of the controversy, is one way to appraise the value of the standard for use in the school health program.

Proceeding on these assumptions, the present study proposes to determine those standards upon which administrators are in general agreement, and to select for further study those standards which are controversial, subjecting the latter to a careful examination in an attempt to discover the controversial issues. If a plan could be devised for applying the criteria of acceptance to a wide range of standards, and at the same time for reducing the sources of error in the use of such a plan, the controversial issues could be satisfactorily isolated. To have any assurance that the controversial issues were all included in the standards selected for further study, it would obviously

be necessary to consider all those school health standards which had any appearance of general acceptance in the earlier studies. The criterion which would sharply differentiate accepted standards from the others would be the requirement that a standard is "accepted" only when it receives the highest possible rating on a scale applied to all the standards. The group participating in the task of rating the standards must of necessity include the individuals actually responsible for influencing the school health program.

The task of isolating the standards in which controversial issues exist, involved the following steps:

The preparation of an inventory list of school health standards found in the earlier studies to be generally acceptable.

The selection of those individuals whose acceptance or rejection of a specific standard might be expected to have an important bearing upon the inclusion of the standard in one or more school health programs.

The construction of an instrument and a plan through which the acceptance or rejection of a given standard by any one individual might be ascertained, and a full expression of opinion of the individual secured on the value of each standard.

The formulation and administration of a plan that would obtain a consensus of opinion on the value of each standard.

Preparation of an Inventory List

The sources consulted in the selection of the school health standards for the inventory list included:

1. Reports and studies in which the findings of research on school hygiene, or the practices in school hygiene were discussed, and in which school health standards were proposed.
2. Reports and studies issued by the Office of Education, and dealing with some phase of school health.
3. Surveys of practice in school health, and studies on legislation and state regulations related to school health.
4. Texts recognized as authorities in the field of school health or educational hygiene.
5. Group reports on special problems related to some phase of

school health, school administration, school organization, and school supervision involved in the maintenance of a school health program. In this group are the reports of special departments of the National Educational Association, reports of health education conferences, etc.

6. Reports of conference studies in which standards proposed in other studies were reviewed and evaluated in the light of their use in the school health program.

The sources[1] consulted yielded about 1000 standards in which there was much duplication of content. Rewording to include all content without duplication helped to reduce the number of standards. Checking the remaining against the standards generally accepted in the conference studies reduced the list to 600 items. These items lent themselves readily to organization into a school health program that made provision for all phases of school health recognized as such in current literature on the subject. The program agreed in all fundamentals with the Scope and Content of Health and Physical Education, as set forth in the Fourth Yearbook of the Department of Superintendents.[2] It was decided to retain all 600 standards, at least for a preliminary study of acceptance. The question arose as to the advisability of asking anyone to read and evaluate so extensive a list. There was the possibility that the reader would tire before the inventory was completely read. That would place the standards which are near the close of the list at a disadvantage. An alternative was to combine those items that seemed to go together. The danger in such a practice lay in the possibility of having a standard fail to secure the acceptance of the group, not because it contained a controversial issue, but because it was associated too closely with one. The advantage, however, offered by the combination, appeared to outweigh the disadvantages, and accordingly an effort was made to reduce

[1] The Bibliography of Sources, pp. 241-249 indicates what these sources were. The summarizing table, facing page 37, indicates additional sources.

[2] Wood, T. D., "Scope and Content of the Field of Health and Physical Education." *Fourth Yearbook of the Department of Superintendence,* Washington, D.C., National Education Association, 1926.

the whole number of items through the use of composite standards. The use of composite standards reduced the total number to 359.

To offset the tendency of loose association of items in a given standard to conceal the real object of disapproval, a request was made for comments and suggestions relative to any objectionable item in the standard in order to bring the controversial item in each standard definitely into focus.

In its original form, the inventory was organized in three sections, Health Service, Health Education, and Physical Education. In this form it was used for the study of school health standards made for the White House Conference, and submitted to four groups of professional students at Teachers College, Columbia University, representing four separate but allied fields. A description of this study is to be found in the unpublished report of the Sub-Committee on School Health Surveys, of the White House Conference, Section III-C.

This preliminary use of the inventory revealed two weaknesses. In the first place, it was still too long. The amount of time needed to rate 359 standards was more than anyone had the right to expect busy persons to contribute to the study. The second weakness was that the inclusion of the section on physical education weighted the checklist too heavily in that direction at the expense of the other subject matter fields, such as mental hygiene and nutrition. Moreover, many of the physical education standards dealt specifically with administrative problems of Physical Education, such as the required number of points in Physical Education for teachers, credit for Physical Education work in high school and college and education of the public as to the value of Physical Education. Furthermore, there were in progress in Teachers College at the time, three studies[3]

[3] Davis, E. C., "Methods and Techniques Used in Surveying Health and Physical Education in City Schools." *Contributions to Education,* No. 515, New York, Bureau of Publications, Teachers College, Columbia University, 1932. 162 pp. Hughes, W. L., "The Administration of Health and Physical Education for Men in Colleges and Universities." *Contributions to Educa-*

dealing in one way or another with standards of Physical Education.

It seemed desirable to drop the Physical Education section, and to safeguard the representation of the phases of the Physical Education program that had to do specifically with the school health program by adding any necessary items. It was necessary to add two standards to the checklist which then included the physical education standards dealing with play space, time allowance for play in the school schedule, facilities for play and the provision of opportunity for wholesome play. This reduced the number of standards in the inventory list to 242, in which form it was presented to the group of school health leaders. The title given to the completed inventory was TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM. References to this inventory or the rating sheet constructed on the basis of it will be by title in the remainder of this report.

Selection of Raters

In selecting the individuals to participate in the study on acceptance of school health standards, an effort was made to meet the following criteria:

1. The group must include only those who can and do exert an influence on the school health program.
2. The subject matter fields and interests represented in the various phases of the school health program must be comparably represented in the group.
3. Bias of any one educational institution must be reduced.

A preliminary study of educational and public school directories, and the attendance lists of national conferences on school health, led to the decision that the conditions of the first criterion could be met more satisfactorily through an

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tion, No. 541, New York, Bureau of Publications, Teachers College, Columbia University, 1932. 181 pp. Coops, Helen, "High School Standards in Girls' Athletics in the State of Ohio." Doctor's Dissertation, Teachers College, Columbia University. 160 pp. *MS.*

initial selection from the attendance rolls of the three recent conferences; Chicago, 1925, Sayville, 1929, and Sayville, 1930. These conferences were sponsored by the American Child Health Association, a national organization interested in the promotion of child health, especially through the public schools. The conferences were organized on a working basis; and the invitations were selective, in that they were extended to those health workers and leaders in the field who might be expected to make a contribution to the cause. While there was the possibility that some leaders in the field might have been overlooked, or might have been unable to attend, nevertheless, it was hoped that a list of those attending at least two of the three recent conferences would provide a preliminary selection of the influential workers in the field of school health. The list so constructed consisted of 125 names. When these names were again checked for participation in the program of the conference, the number was reduced to 100. Recent educational directories were then consulted to find what positions were held by the persons whose names appeared on the list resulting from the check on participation. The names of all persons on the list just cited, who held positions of a supervisory or administrative character were transferred to another list. In this selection it was assumed that the director or supervisor of a school health program might be expected to exert a more significant influence on the program than a classroom teacher or school nurse. When completed, the list contained the names of 85 persons who might reasonably be expected to influence the school health program. To avoid the possibility, however, that some influential person had been overlooked, the list of 85 names was submitted to a jury of three with instructions to add the names of any leaders in school health not included in the list. The names of three school superintendents who had been active in the promotion and maintenance of school health programs were added independently by all three members of the jury.

The members of the jury were instructed to select independently, the names of fifty persons listed, who might reasonably

be expected to exert a relatively greater influence on the school health program than the others on the list. Further instructions were to safeguard the representation of the subject matter or professional interests related to the field of school health; to maintain a good geographical distribution; and to safeguard against bias. The interests listed for representation included the public health, medical, dental and nursing fields; nutrition, mental hygiene, physical education, natural sciences, child development, school administration, teacher training, and health education. The jury consisted of three people who had participated in all three of the conferences, who knew all the workers in the field fairly well professionally, and who had reputations of fair-mindedness among their co-workers. One of the number came from the medical profession; one held an administrative position in a national organization promoting health work for children; and the third was a member of the teaching staff of a teacher training institution, with the responsibility of preparing teachers for their work in health education. In the case of at least one of the three, there was but little possibility of Teachers College influence in the selection of names. Inasmuch as Teachers College has figured so prominently in the preparation of workers for the field of school health, it was most difficult to meet the other two criteria and at the same time avoid the possibility of Teachers College bias. The success of the jury in reducing possibility of such bias may be seen in the fact that of the 60 names yielded by the independent selection by the jury, only 15 had spent more than a summer session at Teachers College, and of this number only *6* had spent more than a year. Other educational institutions were represented as follows: Chicago, 6; Harvard, 4; Yale, 4; Johns Hopkins, 2; Clark, 2; University of California, 3; Michigan, 2; University of Kansas, 2; and one each from the University of Georgia, University of Kentucky, University of North Carolina, Leland Stanford University, University of Illinois, University of Texas, University of Minnesota, Boston University, University of Iowa, and one each from Goucher, Wellesley, and

Peabody College. The 8 who had spent a summer session at Teachers College held degrees from other institutions, but were not included among those reported. A good geographical distribution was maintained in the persons selected, and a good distribution among the subject matter fields and interests. Of the 60 names resulting from the selection, 40 represented the choice of all three; the remaining 20 retained on the list had two votes out of three. The result of this method of selection represented a reasonably accurate list of the leaders actively engaged in the direction or supervision of school health programs, or in the preparation of school health workers; the various interests related to school health were comparably represented, and the possibility of Teachers College bias was reduced as much as was consistent with meeting the other two criteria.

Selection of Method and Instrument

In applying the criterion of acceptance to a specific standard, it seemed reasonable to suppose that the status of acceptance might be very well expressed in terms of the value of the standard in question to the school health program. Furthermore, it seemed fair to assume that, if and when secured, the consensus of opinion of the selected group that a specific standard was essential to the school health program, would constitute an index of acceptance of that standard by the group expressing the opinion. If the application of the criterion of acceptance was to give significant results in isolating the controversial issues, a method must be selected that would give the very best measure of the consensus of opinion among the members of the participating group. A survey of research methods adapted to the purpose suggested that some form of questionnaire method was practically the only one available at the present time. The unsavory reputation of the questionnaire method among serious investigators of scientific problems is well known to the writer; as are the short-comings of the method. Nevertheless, when a task demands attention, it seems highly desirable to make the best possible use of the tools that are

available. Moreover, it would appear that a study of opinion is the very type of study in which a questionnaire is most appropriate:

" . . . Just as long as these consensus of opinions are important to know a questionnaire is the only appropriate instrument for their discovery."[4]

One of the frequently-stated shortcomings of the questionnaire method is that the investigator has little claim to the time, interest, or effort of the persons to whom the questionnaire is addressed. In the present case, the problem attempted was one in which the individuals approached were already definitely interested. For the most part, members of the rating group had faced the situation of organizing a school health program and had found the need for the type of information which it was the purpose of the present study to gather.

To meet other possible shortcomings of the method, precautions were taken to safeguard the selection of the raters, and there was every reason to believe that the list of prospective raters contained the group whose opinion was desired. The possibility of an uneven distribution of responses among the subject matter fields, and the subsequent effect in giving weight to opinion favoring one field at the expense of another, was foreseen, and a plan made to care for it. These were the possibilities of error that could only be reduced as much as it was possible to do so beforehand. The problems which arose later would have to be met as they arose.

As an instrument for collecting opinions of the individuals in the selected group, a rating sheet was prepared from the inventory list. A space at the left of the number of the standard served for the rating, and a wide space at the right invited comment. The schedule on page 207, named TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM, retains the form of the rating sheet, except that the median rat-

[4] Kelley, T. L., *Scientific Method,* Columbus, Ohio State University Press, 1929, pp. 49-50.

ings occupy the space which in the rating sheet was allowed for comments.

The following rating scale was used in connection with the rating sheet. The index of acceptance was *5-Essential.* It was assumed that the relative frequency of such ratings as *1-Questionable,* and *0-Objectionable,* together with the comments of the raters, would reveal the controversial issues.

THE RATING SCALE TO BE USED IN EVALUATING THE SPECIFIC ITEMS INCLUDED IN THE *TENTATIVE STANDARDS*

5.....*ESSENTIAL* in a school health program.
4.....*HIGHLY DESIRABLE* in a school health program, but not essential.
3.....*DESIRABLE* in a school health program.
2.....*OPTIONAL*—its absence would not materially affect the program.
1.....*QUESTIONABLE*—its value is seriously open to question.
0.....*UNDESIRABLE*—should not be included.

Use this scale to indicate your opinion of the value of each item in the following standards of the school health program. In the space before each item write the number which indicates the value you would give to that item.

A preliminary use of the rating sheet and the rating scale was made during the Columbia University summer session of 1930. The group participating in the trial study of acceptance was composed of 142 professional students representing four different but allied fields in Teachers College. In addition to the service rendered in indicating the need for a shorter rating sheet, for an adjustment of weighting that would be fair to all interests represented in the program of school health, and for minor changes in organization, the trial rating gave a cross section of opinion in certain student groups at the college that session. According to the opinions expressed in the rating, there were 43 standards for which acceptance was established in the student group. These results were less than one-fifth the number of standards later accepted by the selected group of

leaders in the field of school health. The length of the rating sheet, the rush of the summer session, and the discomfort entailed by the unusually hot weather, may have operated to condition the student response. (The description of this study may be seen in the report of the Sub-Committee on School Health Survey, White House Conference, III-C, *MS.*)

REFERENCES USED IN CHAPTER III

1. Coops, Helen. *High School Standards in Girls' Athletics in the State of Ohio,* doctor's dissertation, Teachers College, Columbia University. 160 pp. *MS.*
2. Davis, E. C. "Methods and Techniques Used in Surveying Health and Physical Education in City Schools," *Contributions to Education,* No. 515, New York, Bureau of Publications, Teachers College, Columbia University, 1932. 162 pp.
3. Hughes, W. L. "The Administration of Health and Physical Education for Men in Colleges and Universities," *Contributions to Education,* No. 541, New York, Bureau of Publications, Teachers College, Columbia University, 1932. 181 pp.
4. Kelley, T. L. *Scientific Method,* Columbus, Ohio State University Press, 1929.
5. Wood, T. D. "Scope and Content of the Field of Health and Physical Education," *Fourth Yearbook of the Department of Superintendence,* Washington, D.C., National Education Association, 1926.

CHAPTER IV

CONSIDERATION OF THE RESULTS AS A WHOLE

Early in the summer of 1931, the rating sheet (TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM), the rating scale described on page 63, a brief explanation of the problem and a letter requesting an opinion on the value of each standard were mailed to 60 selected leaders in school health. Fifty responses were received within a month. A survey of these in the light of the representation of fields of interest, revealed the desirability of securing one more rating from the group representing superintendents of schools, and one from the group of Child Development specialists. With the advice of the jury responsible for the selection of raters, two prospective raters were named and their coöperation secured. This gave a total of 52 responses to the request for opinions on the standards.

The Responses as a Whole

A study of the responses as a whole revealed the following:

1. The response may be considered adequate for the purpose of the study. A return of 52 rating sheets filled out and offering comments on specific standards, out of 62 sheets circulated, or a return of 84 per cent, is a much higher percentage of return than is ordinarily achieved in a questionnaire study. Furthermore, there was no reason in this study to wish for a random sample of leaders, or even for a random sample of the persons to whom the rating sheets were sent. The original list was frankly and intentionally selective. Consequently the hazard of non-random sampling presented by incomplete returns in certain types of questionnaire study does not apply here, unless the persons failing to reply tend to come from certain interest fields, or from certain geographical sections, and thus to bias the results.

2. The probability of bias had been reduced through the

provision for representation of subject matter fields and allied interests. The ten persons failing to respond were well distributed, holding the following positions respectively: professor of education in child development in a state university; director of a school health program in a public school system; a supervisor of student health in a state teachers college; a nutritionist in charge of a health program; the director of one of the national organizations promoting child health; a state director of physical education, with some responsibility for school health; the head of a department of school health in a midwestern university; a public health specialist; and two school superintendents. The states represented by the non-raters were: Alabama, California, Colorado, Illinois, Massachusetts, Michigan, and New York.

3. The response was approximately complete: 70 per cent of the standards were rated by at least 80 per cent of the persons approached, and only 12 per cent of the standards were rated by less than 77 per cent of the group. The lowest number of ratings received by any one standard was 45, 72 per cent of the possible ratings. Standards No. 74 and No. 75 received this number of ratings.

4. The rating group as a whole appeared to give serious thought to the consideration of the value of specific items. Thirteen of the group failed to add comments to their ratings, but 5 of these wrote letters in which they made general comments regarding certain sections of the program on which their interests centered. Thirteen of the group commented generously on not less than 10 per cent of the 131 standards included in the section on Health Service. The average number of standards receiving comment from the thirteen raters was 25. The highest number of standards receiving comments from any one person was 37, or 28 per cent of the total number of standards. Sixteen of the 131 standards in the Health Service section failed to receive comments; while the remaining 115 averaged 4 comments each.

5. The predominance of *4's* and *5's* among the ratings gave

assurance that the number of standards isolated would probably not be too large for further consideration in the study.

6. The ten letters received from raters indicated that while the presence of composite standards had constituted a difficulty when it came to rating, the difficulty had been met in part by giving a separate rating to each item in the standard, which some raters did, in addition to giving a rating to the standard as a whole. The practice of rating the constituent items would favor a better isolation of controversial elements, as would the comments on the specific standards. Unless evidence were to be revealed later in the study that the compositeness of a standard seriously affected the isolation of controversial issues, it seemed fair to assume that its influence upon the separation was not significant.

From the facts revealed, it seemed safe to assume that the method and instrument had justified the confidence placed in them; and that a detailed study of the comments accompanying the ratings would probably indicate some of the controversial issues in the school health standards.

The Isolated Standards as a Whole

When the individual ratings of specific standards had been assembled and the median rating secured for each standard, it was apparent that the use of the median rating of *5-Essential* as an index of acceptance had divided the whole set of school health standards into two unequal groups, with 210 accepted standards constituting the larger group, 86½ per cent of the whole set of standards.[1] It is on the smaller group of 33 standards which had not received a median rating of *5* and which were therefore defined as "not accepted," that the attention of the study now centers.

It might be supposed that the function of this study was to

[1] The apparent discrepancy in the number of standards arises from the fact that standards No. 175 and No. 228 were consistently rated in two parts. The two parts are identified respectively as No. 175 and No. 175a—No. 228 and No. 228a.

scrutinize the school health program as a whole in the light of the effect upon it of the failure of the 33 standards to secure a median rating of *5*. However, the stated purpose of the present study was the isolation of troublesome questions related to school health programs, and the examination of these from the standpoint of present trends and practices in school health, and in the light of the findings of research. The attention of this investigation, therefore, will be directed away from the larger group of generally accepted standards, and concentrated on the standards which were separated from the rest by their failure to secure a median rating of *5*.

In Table 4 appear the 33 standards thus isolated. The median ratings which, with the exception of two, do not fall below *4,* indicate the tendency toward acceptance of the standards. This tendency may be due to a halo effect resulting from the fact that only those standards that had apparent general acceptance were included in the original inventory list. In this table also appear the number of individual ratings given at the extremes of the scale. It was assumed that an individual rating of *4-Highly Desirable,* appearing as it does near the top of the scale, indicated a strong leaning toward acceptance, and that an individual rating of *1-Questionable* for a like reason, indicated a strong leaning toward the rejection of the standard. The relative approval and disapproval are shown in Table 4. The standards are arranged in the order of increasing disapproval, regardless of the section of the program represented by any specific standard.

From Table 4 it would appear that the first 9 or 13 standards failed to receive a median rating of *5,* not because of the strength of the protest registered against them, but because the members of the rating group hesitated to assign a value of "essential" to them. A study of the comments did not in all cases reveal the reason for the tendency noted.

It may be of interest to examine the consensus of agreement on these standards further by asking for which of them, in another similar sample of raters (if such were possible), the percentage of persons marking the standard as highly desirable

or better could, by the accidents of sampling alone, be expected to fall below 75 per cent of the raters. If p represents the percentage in question, this may be assumed equivalent to the condition that $p-.75$ is at least as large as $\frac{pq}{N}$ where q equals 1-p. Setting this up as equations, with N successively equal to 52, 51, 50, and 49, and solving each case for p and n, we find:

If N equals 52, p equals 88.3 and n equals 46 or more
If N equals 51, p equals 88.4 and n equals 45 or more
If N equals 50, p equals 88.6 and n equals 44 or more
If N equals 49, p equals 88.6 and n equals 43 or more

In this n equals the number marking the standard highly desirable or better. Thus if there are fewer than 43 out of 49 persons marking a standard as highly desirable or better, it may be considered that the percentage of such markings is not reliably higher than 75 per cent. This condition would eliminate all the items in Table 4 except No. 60, and possibly No. 24 (which almost meets the condition and would meet it if 2+ instead of 3+ were used as the criterion of reliability.)

It may also be interesting to ask which of the percentages of raters marking an item as questionable or worse is reliably less than a given percentage, 25 per cent for instance. If we set $.25-p$ as equal to or greater than $\frac{pq}{N}$, and solve for p and n (i.e., the number marking the item questionable or worse where p is the percentage so marking it), we find that n equals 6 or less, no matter whether N equals 52, 51, 50, or 49. This would mean than in another sample of raters, the percentage marking items No. 44, No. 144 . . . as Questionable or worse might through the operation of sampling errors alone, approach 25 per cent. From this consideration, it appears that accident of sampling could not account for the non-acceptance of the last fourteen standards in Table 4 and probably not for any of them excepting standards No. 24 and No. 60.

TABLE 4

SCHOOL HEALTH STANDARDS SELECTED FOR FURTHER STUDY THROUGH THE APPLICATION OF THE CRITERION OF ACCEPTANCE* TO THE ENTIRE RANGE OF STANDARDS SUBMITTED TO SELECTED RATERS

Item No.	Statement of Items Included	Median rating	Total number of Raters	Number of ratings at Extremes of the Scale: Highly desirable or better	Number of ratings at Extremes of the Scale: Questionable or worse
8.	The school should provide adequate psychological service for determining the ability level of children	4	51	39	0
131.	Teachers should be encouraged and assisted to form hiking clubs and other types of wholesome recreation	4	52	36	0
6.	A special room should be provided for the health examination	4	52	27	0
60.	A battery of windows should be placed for left-hand lighting, and reach within six inches of the ceiling and three feet of the floor. The windows should not be more than 12 inches apart. There should be a dead wall space of five feet at the front of the room	4	49	47	1
211.	Materials that show a child how to acquire a skill should supplement written directions with charts and drawings	4	49	39	1

In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

* By "acceptance" of a standard is meant the agreement of the rating group as a whole that the standard is essential to a comprehensive school

TABLE 4 *(Continued)*

Item No.	Statement of Items Included	Median rating	Total number of Raters	Number of ratings at Extremes of the Scale: Highly desirable or better	Number of ratings at Extremes of the Scale: Questionable or worse
86.	The ventilating system should supply every occupied room during the entire time of occupancy with a minimum supply of 10 cubic feet per pupil, per minute, of clean, pure, outdoor air. (Legal requirement in some states is 30 cubic feet per pupil, per minute.)	4	49	35	1
24.	Through special classes for children who are crippled to the extent that their attendance in the regular classroom is difficult (see p. 76)	4	52	45	1
75.	Elementary schools should be equipped with showers adjacent to the playrooms or gymnasium	4	45	33	1
9.	The school should provide through an adequately trained mental hygiene staff for the study of personality difficulties	4	51	39	1
57.	Fifteen square feet of floor space and 200 cubic feet of air space should be allowed as a minimum for each child	4.5	46	38	2

health program. A median rating of 5-ESSENTIAL is taken as an index of acceptance.

The median rating of a specific standard appearing in this table indicates in general the approximation of acceptance secured for that standard in the present study of agreement.

Individual ratings clustered at the extremes of the scale indicate the relative frequency of the approval or disapproval of a specific standard as registered by individuals in the present study of agreement.

The standards in this table are arranged in the order of increasing frequency of disapproval as registered by individuals.

TABLE 4 *(Continued)*

Item No.	Statement of Items Included	Median rating	Total number of Raters	Number of ratings at Extremes of the Scale: Highly desirable or better	Number of ratings at Extremes of the Scale: Questionable or worse
33.	In case of pediculosis or scabies home-treatment slips should be sent home with the child.....	4	52	42	2
28.	An isolation room should be provided in all schools.....	4	51	33	2
58.	Rooms should be rectangular, with windows on the long side, and with doors opening outward or swinging in both directions.....	4	48	38	2
42.	For high schools no site of less than ten to twelve acres will suffice for the outdoor activities of the boys and girls.....	4	49	38	3
130.	The school should provide wholesome living conditions for teachers in communities where satisfactory accommodations are not available	4	52	41	3
38.	This immunization may be given by the Board of Health.....	4	51	27	3
230.	The tests should include test situations in which the child reports what he would do under the circumstances	4	50	35	4
23.	Through special classes for selected and favorable cases of cardiac children to furnish the advantage of an education especially suited to their needs (see p. 76)	4	52	36	4
73.	The toilet bowls should be of porcelain with automatic flush, and should be provided in the ratio of one seat for every 15 girls, and one for every 25 boys. One urinal should be provided for every 15 boys	4	50	39	5

TABLE 4 *(Continued)*

Item No.	Statement of Items Included	Median rating	Total number of Raters	Number of ratings at Extremes of the Scale: Highly desirable or better	Number of ratings at Extremes of the Scale: Questionable or worse
44.	All school buildings should be constructed from fire-resistive material, and should not be more than two stories above the ground floor. The basement should be used only for the heating plant and similar services	4	52	43	6
144.	The school should provide new and replacement materials on the request of the teachers	4	49	38	6
11.	The school should provide a complete dental examination for each child at least once a year	4	52	39	6
124.	The school should provide a thorough health examination for all teachers in service. The examination should be made by the school physician	4.5	52	37	6
3.	The school should provide annually for a thorough examination of each boy and girl	4	52	35	6
231.	The tests should include self-checking on practices. (Must be safeguarded because of source of error.)	4	49	29	7
5.	The classroom teacher should make a preliminary test of the vision and hearing of the children	3.5	52	26	8
95.	The gifted child—Special groups should be provided for the gifted, that is, the upper 2 to 4 per cent on the educational and intellectual scale	4	51	27	9
93.	In communities where study or observation established the fact that children are not receiving sufficient				

TABLE 4 *(Continued)*

Item No.	Statement of Items Included	Median rating	Total number of Raters	Number of ratings at Extremes of the Scale: Highly desirable or better	Number of ratings at Extremes of the Scale: Questionable or worse
	food, the school should furnish sup- supplementary feeding at the period in the day when it seems to be most needed. The school will have to determine whether the need exists and what foods best meet the needs....	4	52	34	10
20.	Through open-air classes for severely run down and under-nourished children (see p. 76)	4	51	28	10
77.	Whenever possible, the floors should be waxed to reduce dust and to eliminate the need for frequent scrubbing. Classrooms should be scrubbed and waxed twice a year. Untreated floors should be scrubbed monthly	4	51	34	11
37.	The school should provide for toxin-anti-toxin immunization.....	4	52	29	12
94.	The basis—The progress, efficiency, and emotional health of the children should be safeguarded by homogeneous grouping.....	4	50	26	12
232.	The tests should include rating of others on health practices, such as a "Guess Who" test.....	2	47	13	21

From the first, the possibility had been recognized that the composite character of some of the standards would seriously influence their separation from the others, and thus tend to conceal the real controversial issues. A detailed examination of the comments offered by the raters, and a study of the precision with which the raters disposed of the constituent ele

ments of the composite standards is needed for the sake of finding out whether the instrument and the comments revealed controversial issues in the isolated standards, and for the sake of studying the influence of the composite character of the standards.

If the rating sheet and the rating scale constitute a means by which controversial issues in the school health standards might be isolated, then the group of 33 standards selected for further study should contain at least some unsettled questions related to the school health program. Hence, a study of the data should reveal what evidence there is to support the belief that the method and instrument used actually isolated controversial issues in the school health program.

That there are probably unsettled questions included in the set of standards which failed to secure a median rating of *5,* might readily be inferred from the data in Table 4 in this chapter. Beginning with Standard No. 230, and continuing to the close of the table, it is apparent that the support of the standards gradually decreases, and the strength of the protest gradually increases. Professional people of the standing of those participating in the present study would hardly take the time to register protests against school health standards without some good reason. The rating, however, merely registers the protest; it does not reveal the reason for it. That is to be found, if at all, if the comments that accompany the rating. In passing, it is interesting to note that Standard No. 230 was the only one in the group that received no comment.

In the following pages a brief review of the comments made by the raters will be given, and the controversial issues revealed in the comments. In this review, the standards which provoked little comment, or comment of relatively small significance will be passed over lightly; and attention will be devoted to those which claimed the most attention of the raters making the comments. This procedure will interfere with following the same order as that used in Table 4, but with the identification of a standard by number, it is possible for the

reader to use the table for reference in connection with the consideration of any standard under discussion.

That the acceptance of the standards in question would be conditioned by the school budget, the school organization and the socio-economic status of the residents of the school district, was the opinion expressed in the comments on Standard No. 6, which provided for a special room for the health examination; Standard No. 8, which recommended a psychological service for determining the ability levels of children; and on Standard No. 75, which advocated shower baths in the elementary schools. The conviction of the raters that all classes should offer optimum conditions for the handicapped child, as well as for the normal, was the gist of a group of comments on Standards No. 20, No. 23, and No. 24, which provided special classes respectively for the undernourished, the selected cardiac cases, and the crippled children. Another set of comments, applying equally to each, was that the need for the organization of such classes would be determined by the number of cases.

The consensus of opinion in the comments on Standards No. 28 and No. 33 was that the results of experience did not favor acceptance. One writer suggested that the difficulty entailed in safeguarding the use of the isolation room, proposed in No. 28, was too great; while a suggestion regarding the practice of sending home-treatment slips to the parent through the child was less effective than a personal message to the parent. That the effective operation of Standard No. 5, providing that teachers shall make the preliminary tests of vision and hearing, and of No. 144, which advocates furnishing new and replacement materials on the request of the teacher, will depend upon the background of education and training of the teacher was the pronounced opinion of the group of comments on each. There was a strong leaning toward placing the responsibility for the selection of the materials on the director or supervisor of the program, and a tendency, slightly less strong, toward assigning the vision and hearing testing to the school nurse. There was a marked tendency in the comments for the writers to disclaim

any responsibility for the school regarding the provisions of Standard No. 130, which relates to living conditions for teachers, and No. 131, which deals with the encouragement of teacher recreation. The comment of one school superintendent on Standard No. 131 reflects the opinion of most of the others:

"In one way, I believe in this; but on the other hand, I think that teachers should be left to determine the use of their leisure time."

A marked recognition of the need for experimental evidence before anything but tentative acceptance could be accorded to Standards No. 94 and No. 95, was shown in the comments on these standards. The size of the protest rating on No. 94 which provides for homogeneous grouping of children, together with the pronounced scepticism in such comments as: "Probably good (?)," "I doubt if this device alone makes for salvation," "In the light of recent findings of research (?)," suggests that this standard may contain one of the "unsettled" questions. Standard No. 95 which would group the gifted, the upper 2-4 per cent on the intellectual and educational scale for instruction purposes, provoked much the same comments as did No. 94. In the comments on the latter, however, substitute recommendations were offered; as: "Richer programs rather than special groups," "Special instruction," and "Special work"; while one writer found the standard, as given, not sufficiently flexible to warrant acceptance.

In the comments on a group of standards dealing with materials in Health Education, there was also a recognition of the need for experimental evidence before acceptance could be given. In the case of No. 211, which offers a criterion for the selection of materials, a second comment indicated the further desirability of recognizing individual differences in children. Standards No. 231 and No. 232 specify kinds of tests to be included among others for the measurement of achievement in Health Education. Two of the comments upon No. 231, which proposes self-checking by children on their health practices, stress the great source of error involved as a strong factor

working against the acceptance of the standard; while a single comment regarding the method of encouraging children to rate each other on health practices, characterizes the procedure as savoring of "the spy system." While this comment may not reflect the opinion behind the other protesting ratings, nevertheless, the very strong protest, the weak support in the rating, and the lack of experimental evidence favoring its use in the elementary school, at least, suggests that in this standard also may be an unsettled question.

Among the standards involving problems of the hygiene of the school plant were three pertaining to some construction features of school buildings, and five concerned with the provision of specific services or facilities. In the first of these groups, Standard No. 58 provides that the classroom be rectangular, with windows on the long side, and with doors opening outward or swinging in both directions. The comments on this standard together with the rating on constituent elements, indicate that the objection to the standard is directed specifically against the provision regarding doors swinging in both directions. The reasons for the objections are given in the four comments which stress the safety hazard involved. In connection with the rating of Standard No. 60, however, the comments throw little light upon the reason for its failure to secure acceptance in the group. The one protesting rater made no comment. One rater thought that there should be no window space in the left wall in front of the front row of seats; and another suggested skylight as a substitute for left-hand lighting. Three comments expressed ignorance of the facts which would allow intelligent rating. Naturally, these three failed to rate the standard.

Standard No. 44 provided for (a) fire-resistive construction of school buildings, (b) restrictions on the height of school buildings, and (c) restrictions on the use of school basements. The rating on constituent elements of the standard, and the comments indicate where the objections of the raters were to be found. A rating of *5* was consistently accorded to the part

of the standard which provided for fire-resistive construction of buildings. In the seven comments a strong protest was made against the restriction on the height of the buildings; while the relationship of height to fire-resistive construction was brought out in the one comment touching on the relationship:

"A properly constructed building may be adequately served by elevators to any number of stories."

The restrictions on the use of basements were also opposed by the rating on that constituent element of the standard and in the comments. The three comments indicated a lack of sympathy with the provisions, but with the exception of one which assigned machine shops to the basement, did little more. None of the comments on any part of the standard indicated a recognition of the need for defining the terms "story," "ground floor," and "basement."

Among the five standards concerned with the provision of specific services and facilities, are two on ventilation. Standard No. 57 specifies the floor space and air space per child in each classroom. The failure of 6 members of the rating group to give this standard a place may have been for the reason given by one of the non-raters, . . . "I do not know the facts." In passing, it may not be amiss to call attention to the difficulty of securing a consensus of critical opinion on so wide a range of fields as that included in the school health program, from a group composed mostly of highly specialized workers. This difficulty would not be so likely to appear in an intensive study of a segment of the program. Standard No. 86, which offers 10 cubic feet of air per child per minute as a substitute for the 30 cubic feet legalized in 20 states, failed to secure a median rating of *5,* with one protest. The two comments throw no light upon the reason for not giving a median rating of *5* to the standard. The lack of comments here may possibly be explained on the same basis as the preceding standard.

Standard No. 42, which proposes a minimum of 10-12 acres for outdoor activities of high school girls and boys, called out

comments from 8 of the raters, and letters from two others. The consensus of opinion favored the theory of having large playgrounds, but considered the provision of this standard not feasible. There seemed to be a tendency to consider as feasible the acreage in the playground in the local situations, as shown in such statements as: "We have nine and a half acres," "Not for the city school, I know," "Twenty acres." The tendency to look with approval on the facilities provided in the local situation was also shown in the comments on that part of Standard No. 73 which dealt with the ratio of toilet fixtures to school enrollment. The general opinion was that the ratio was too high, especially in schools where the staggered recess periods were used. One school superintendent says:

"My experience shows this ratio to be excessive. It may be O.K. for single recess period schools, but not in the modern schools with staggered recess periods."

The objections to the automatic toilet flush (provided for in the same standard), as voiced in the five comments, were even stronger than those to the ratio proposed. The comment of a director of a health program in a large city reflects the other opinions:

"The automatic flush type of toilet is to be condemned. The use of such an appliance would in necessity be limited to a public building. We, therefore, would be introducing a factor foreign to the every day life of the child."

Standard No. 77, which provides for waxing the classroom floors to keep down the dust, and for the care of untreated floors, drew comments from nine of the rating group. In the rating of this standard and in comments as in the case of other standards that were made up of several items, the raters gave a place to each of the constituents, and directed comments against the specific element considered objectionable. In this standard, the practice of waxing the floors was held to be undesirable, in that it offered a safety hazard to children. In a letter, a state director

of school health voiced an opinion which includes the points raised in the other comments:

"Number seventy-seven, in the provision of the first sentence, would seem to create a safety hazard. I presume you mean to state a preference of wax over oils. Wax does make a slippery surface that may cause falls. I wonder if there is not some light colored, good grade floor oil that would be preferable."

The group of standards which stimulated much comment includes seven that assumed certain functions for the school. The protest ratings and the comments indicate that at present complete agreement is lacking on what the function of the school is. The standards in the group are: No. 3, which specifies that the school shall provide a health examination for children, No. 9, that it shall provide a mental hygiene staff for the study of personality difficulties, No. 11, that it shall provide a dental examination for school children, No. 37, that it shall make provision for the immunization of children against diphtheria, and No. 38, which is related to it and which assigns the immunization treatment to the board of health, No. 93, which provides for supplementary feeding of school children, and finally No. 124, in which the school accepts the responsibility for the health examination of teachers.

Standard No. 3, which contained two parts, the first providing for the examination, and the second specifying the frequency, received 7 comments, which like the ratings of the constituent parts of the standard, revealed the opposition. Five of the comments, four of them from workers in the health service section of the field involved, and one from a school superintendent, questioned the practice of requiring an annual examination, and suggested that it would be better to sacrifice frequency in favor of securing a more thorough examination at stated intervals in the elementary school career. Two of the comments raised the question as to whether the health examination was the function of the school. One of these from the medi-

cal director of the school health service in a large city states the case for those who did not believe that the school should include the health examinations in its functions. His comment follows:

"That school health service which carries the maximum educational value will teach the children and their parents to secure such an examination from their own physician."

The three comments on Standard No. 9 indicate that there is still some doubt as to whether the school should provide a mental hygiene staff or depend upon some state or welfare agency for the services. The provision for a dental examination by the school met the same general type of comment as that given on the health examination. A national leader in the school health movement offered a comment that was significant:

"The school should make sure that the child has a dental examination once a year. This should, when possible, be made in a dentist's office."

In the seventeen comments on Standard No. 37, in which the school assumes the responsibility for providing for the diphtheria immunization, the opinion that this immunization was the function of another agency was very emphatically expressed. Three of the comments admitted that in some types of communities, it might be necessary for the school to assume the chief responsibility; four point out that the school responsibility lies in the field of . . . "continuous education as to the need." The nine comments claiming the function for another agency were divided in choice between the private physician and the Board of Health. They are included in the comment which follows:

"This is a problem of the pre-school age. . . . When this work is turned over to the private physician in its entirety, we find that not only is there a higher percentage of protection given to the pre-school children, but likewise to the school children."

The comments accompanying Standard No. 38 were much the same as those directed upon No. 37. The consensus of opinion

favored the family physician, to the end that the parent might be led to assume the responsibility, yet recognized the fact that the school function in continuous education was an essential feature in the program.

Standard No. 93, in which the school assumes a responsibility for supplementary feeding of children, called forth comments from 8 members of the rating group. There was reflected in the comments offered a definite belief that the school functions did not include supplementary feeding of children. One comment sets forth the situation very clearly from the point of view of those who question the advisability of the school's assuming a service rôle:

"Supplementary feeding in the school based on the supposition that a child is underfed is to be condemned as much as possible. Such a practice, while common, does not tend to eradicate the difficulty. If real economic distress is the cause, the relief must come through some public welfare agency acting in the home. If ignorance on the part of the parent is the cause for lack of food, then again the corrective measure must be instituted in the home."

From the foregoing review of the comments made by raters on the 33 school health standards isolated through the failure to get a median rating of *5,* it would appear that many of the unsettled questions related to the school health problems are to be found in this group of standards. In the following pages an unsettled question is identified with the standard in which it is to be found; it is classified to show the significance to the school health program; and its status as reflected in the comments is indicated by code. (Code symbols are explained below.)

U Unsettled, function frequently assigned to another agency.
U_1 Unsettled, unwilling to claim the function for the school.
U_2 Unsettled, conditioned by the school organization, school budget, size of staff, and demand.
U_3 Unsettled, use does not seem to favor acceptance.
U_4 Unsettled, conditioned by preparation of the teacher.
U_5 Unsettled, pending further evidence.

U_6 Unsettled, presumptive evidence favors acceptance.
U_7 Raters claimed a lack of knowledge necessary for acceptance.
U_8 Benefits should be made available in regular classrooms.
U_9 Appears to be tendency in comments for rate to reflect local situation.

Status of Ques.	No. of Standard	A—Should the school include the following services in its functions:
U	3	The health examination of children.
U	11	The dental examination of children.
U	93	Supplementary feeding of school children.
U	124	Health examination of teachers.
U_2	9	Provision for a mental hygiene staff to study personality difficulties of children.
U_1	130	Provision of wholesome living conditions for teachers.
U_1	131	Encouragement and assistance in arranging for teacher recreation.
U_2	8	Psychological service to determine the ability levels of children.
U	37	School provision for diphtheria immunization.

Status of Ques.	No. of Standard	B—Are the following means best suited to the educational and service functions of the school:
U_8	20	Special classes for malnourished children.
U_8	23	Special classes for selected cardiac cases.
U_8	24	Special classes for crippled children.
U_8	95	Special groups for the gifted—the upper 2-4% of the intellectual and educational scale.
U_5	94	Homogeneous grouping of children for purposes of learning and teaching.
U_4	5	Teacher testing of vision and hearing.
U_7	86	Reduction of air supply per minute per child in the classroom, from 30 cu. ft. to 10 cu. ft.
U_2	6	Special room for the health examination.

U_3	28	Isolation room in each school.
U_3	77	Waxing the classroom floors to keep down the dust.
U_3	77	Scrubbing the untreated floors monthly.
U_3	33	Home-treatment slips sent home with the child in cases of pediculosis and scabies.
U_2	3	The health examination of school children to be annual.
U_2	75	Shower baths in the elementary school.
U_5	73	The following ratio of toilet fixtures to school enrollment: 1 seat for every 15 girls 1 urinal for every 15 boys 1 seat for every 25 boys
		The following specific provisions related to health education materials and methods.
U_4	144	New and replacement materials provided on teacher request.
U_5	211	Illustrative material as charts and pictures in teaching skills.
U_5	230	Use of situation tests in which a child tells what he would do.
U_5	231	Self-checking tests on health practices.
U_5	232	Tests in which a child rates the health practices of others.

Status of Ques.	No. of Standard	C—Are the following construction features of school buildings among those designed to favor the best functioning of the school organization:
		For classroom lighting
U_7	58	Rectangular rooms.
U_7	58	Windows placed on the long side.
U_6	60	Left hand lighting.
U_6	60	Windows arranged in a battery.
U_6	60	Mullions not more than 12 inches.
U_6	60	Windows reaching within 6 inches of ceiling.

U_6	60	Window ledge between 3 and 4 feet from the floor.
U_6	60	Windows not to extend past a line 5 feet from the front wall.

For fire protection

Status of Ques.	No. of Standard	
U_9	44	Fire-resistive construction for school buildings.
U_9	44	Restrictions on the height of school buildings.
U_9	44	Restriction on the use of basements.
U_3	58	Specifications for hanging classroom doors.

For provision of space for children

Status of Ques.	No. of Standard	
U_7	57	Allowance of 15 square feet of floor space per child in each classroom.
U_7	57	Allowance of 200 cubic feet of air space per child in each classroom.
U_9	42	A minimum of 10-12 acres for outdoor activities of high school girls and boys.

These questions represent a conservative estimate of the unsettled questions related to the school health program as revealed in the comments of raters. From the evidence it appears reasonably safe to assume that the rating sheet and the rating scale did reveal some of the controversial issues in the field of school health. Moreover, it would appear that the composite character of the standard did not seriously interfere with the isolation of the issues. In fact the presence of several items in a single standard seemed to provoke comment, which in turn served to throw the controversial issue into clearer focus than might have been secured otherwise.

PART III

EXAMINATION OF INDIVIDUAL STANDARDS SELECTED FOR FURTHER STUDY

Purpose and Scope of the Examination

The consideration in Chapter IV, of the group of isolated standards as a whole, revealed many unsettled questions related to the school health program. The summary at the close of the chapter indicates what these questions are: in which specific standard a question arises; and the status of the question as reflected in the comments of the raters. An examination of the individual standards in the light of present practice and trends in the field, as well as in the light of evidence contained in research and other professional literature, might be expected to further clarify the status of the question, and the standard in which it is found. In the succeeding pages, the standards selected for further study will be subjected to an examination in which each standard will be considered as follows:

Do present practices and trends in so far as they are revealed in current literature support the provisions of the standard? Do they support the treatment accorded the standard by the raters?

Do the conclusions drawn from the findings of scientific investigations or from published opinions or recognized authorities in the field support the provisions of the standard? Do they support the treatment accorded standard by the raters?

Do accepted standards tend to maintain acceptance?

What development if any in the controversial issues is reflected in the literature?

What are the possibilities in research for the settlement of the controversy in relation to the standard?

The order in which the standards will be considered will follow in general the order in which they appear in TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM, on pages 207-38. While no attempt will be made to repeat the detailed treatment of comments as given in Chapter IV, it seems desirable briefly to summarize the treatment accorded each standard that the reader may more easily appraise it in the light of present practices and the findings of research.

CHAPTER V

STANDARDS RELATED TO HEALTH SERVICE BY PROFESSIONAL AND LAY WORKERS

Health Examinations and Inspections

This chapter is concerned with the consideration of school health standards in which are involved six unsettled questions related to the school's acceptance of certain service functions, and five concerned with the selection of means suitable to the functions if and when they are accepted. The treatment accorded the standards by the raters will be dealt with briefly here, because Table 4 on pp. 70-74 and the discussion of comments on pp. 74-83 furnish a readily accessible means for reference on median ratings, relative approval and disapproval, and the reasons for the protests.

Standard No. 5: "The school should provide annually for a thorough examination of each girl and boy."—All 52 of the raters gave this standard a value; 67 per cent supporting it and 11 per cent protesting against it. The comments of the raters revealed two troublesome questions connected with the protests:

Is the health examination of children the function of the school? (Raised in two comments.)

How often should children be given a health examination? (Raised in five comments.)

Ever since 1898,[1] when the standard was first proposed, the question regarding the "function" of the school has been repeatedly raised, though less frequently in recent years. In the early days of the twentieth century the opposition to the school's assumption of the responsibility came from local boards of

[1] Report of the U. S. Commissioner of Education, 1897-98, Office of Education, 1899, p. 1509.

health and public health departments. Wood and Rowell[2] review the arguments offered by both sides in the controversy and conclude in favor of the school responsibility. Today, while the examination of school children is the responsibility of the local boards of health in the very large cities,[3] and while occasionally, a plea is made for the centralization of the work in the board of health, for the most part the opposition to the school appears to favor the family physician[4] as the examiner.

The evidence of a growing belief that the functions of the school do include the health examination of children is revealed in the recent surveys of school practices, recent studies of legislation and state regulations related to school health problems, as well as reports of other studies and conferences. Rogers[5] found that of 464 cities above 10,000 answering his questionnaire, fully ⅔ of them reported that the medical examination of school children was under the administration of the board of education, about 1/7 under the board of health, and the remainder under joint control.

This suggests that there has not been much change in the situation since ten years ago when the Joint Committee[6] reported that in 73 per cent of 326 cities of all sizes, the school health program was under the control of the board of education.

[2] Wood, T. D., Rowell, H. G., *Health Supervision and Medical Inspection of Schools*, Philadelphia: Saunders, 1927, pp. 41-2.

[3] Report of the Municipal Health Department Practice, American Public Health Association, 1923; also Report of the New York State Health Commission, 1932, p. 298.

[4] White House Conference, III-C., "The School Health Program," N.Y., Century, 1932, Chapter on Medical Service.

[5] Rogers, Dr. J. F., "School Health Activities, 1930," *Office of Education Pamphlet* No. 21, 1931, pp. 2, 10, 18.

[6] Wood, Thomas D., "Health Service in City Schools of the United States," Report of the Joint Committee of Health Problems in Education, National Education Association and American Medical Association, 1922, p. 4.

The most recent study of legislation[7] and state regulations related to matters of school health, reveals 27 states with mandatory provisions for the health inspection of children, and 37 with some provision beyond the examination of the teacher or the establishment of dental clinics. The authority in 30 states is vested in local boards of education, in 6 it is given to the local board of health, and in 1 the examination is under joint control.

In 1930, Rogers[8] addressed an inquiry concerning the content of laws regarding medical inspection to 70 medical inspectors (all members of the American Association of School Physicians) in 28 states. Included in the inquiry was the following question:

> Should the local board of education be responsible (as is usually the case) for the local administration of the law (medical inspection of school children)?

Replies were received from 48 physicians in 25 states, with 42 favoring the control and administration in the hands of the local board of education, 5 favoring the board of health, and 1 favoring joint control.

In the White House Conference, one committee[9] reported favorably for school control of the health examination and set forth arguments designed to support their claim that school functions legitimately included health examination of children. Another sub-committee of the same general division, however, in considering the health examination of school children, offers the following:

> "Preferably, the examination should be given by the family physician."[10]

[7] White House Conference III-C, "Report of the Sub-Committee on Legislation," p. 76, *MS.* 106 p.

[8] *Ibid.*, pp. 6-9.

[9] White House Conference III-C, "Report of the Sub-Committee on The Administration of the School Health Program," New York, Century Co., 1932, pp. 6-8.

[10] White House Conference III-C, "The School Health Program," New York, Century Co., 1932, Chapter on Medical Service.

The reason advanced by the second committee for their choice was that the examination by the family physician would be more thorough than that given as part of the school service. A recent report of a study made in coöperation with a state health commissioner contains a review of the legislation of that state regarding health examinations and subsequent professional services in the schools, the actual practice in school health examinations in the city school systems and rural districts, and an evaluation of the work. The study concludes with the recommendation that all the health activities of the school be under the jurisdiction of the appropriate school authorities, but that every effort should be made to carry out a plan for coordination of the efforts of the health and educational authorities in the interests of improved health service for school children.[11]

The need for a school medical service which would include a health examination for school children, and which would be the responsibility of the educational authorities is recognized in the representative contributions to the subject by Wood and Rowell,[12] Terman and Almack,[13] and the Joint Committee.[14]

From this brief review of the representative literature on the subject of health examination of school children, it appears that among educators, school medical inspectors, and in legislation there is a strong leaning toward the recognition that the examination in question is a function of the school. The minority opposition to the delegation of such a responsibility to the schools appears to rest with the medical profession and the public health groups, and in connection with the medi-

[11] New York State Health Commission, "Public Health in New York State," State of New York Department of Health, Albany, 1932, pp. 297-319.

[12] Wood, T. D., Rowell, H. G., "Health Supervision and Medical Inspection of Schools," Philadelphia, Saunders, 1927, pp. 41-2.

[13] Terman, L. M., Almack, J. C., "The Hygiene of the School Child," Boston, Houghton Mifflin Co., 1929, pp. 10-11.

[14] Joint Committee on Health Problems, "Health Education," Joint Committee Health Problems in Education of National Education Association and American Medical Association, Washington, D.C., 1930, p. 157.

cal profession at least is based on the assumption that the family physician would make a more thorough examination than could be secured through the school health service. The report of the special commission for the study of the public health situation in New York State, cited in this discussion, favored a plan whereby the health and educational institutions of a community might be coördinated in the interest of better health service for school children. It seems clear that if the school is to retain without opposition the control of the health examination of children, now generally recognized as legitimately a school responsibility, it will be necessary to safeguard the quality of the examination, its thoroughness, and its fullest educational value.

The second question raised in connection with Standard No. 3 was concerned with the frequency of the examination. The opposition to the annual examination expressed in the comments of the raters was based chiefly on the grounds that the annual examination was not necessary. Such a statement would probably be as difficult to prove as would a statement that the annual examination is necessary. The criticism[15] of the annual examination of school children offered in the recent report of the New York State Health Commission, to the effect that in practice quality was sacrificed to frequency, if true, appears to be a much stronger argument.

A recent study of legislation and state regulations related to the frequency of the health examination reports as follows:[17]

"Examinations are required annually (presumably of all pupils) in 20 states; every 2 years in 2 states; and every 3 years in 1 state."

A study of practice in the field,[18] made during the same year,

[15] New York State Health Commission, "Public Health In New York State," Albany, State of New York Department of Health, 1932, pp. 297-319.

[17] Rogers, J. F., "Statewide Trends in Health and Physical Education," *Office of Education Pamphlet* No. 5, 1930, p. 3.

[18] Rogers, J. F., "School Health Activities, 1930," *Office of Education, Pamphlet* No. 21, 1931, p. 33.

reports that slightly less than 40 per cent of the 464 cities responding, provided health examinations before school entrance, but does not report on the frequency of the examination subsequent to entrance except for the group of cities between 5 and 10 thousand, in which group less than 50 per cent of the cities provided annual examinations.

The desirability of a complete health examination by a physician, each year for each child, has been advanced repeatedly by leaders in the field of school health and child welfare. The Children's Bureau,[19] the American Public Health Association,[20] The National Child Health Council,[21] The Joint Committee,[22] The White House Conference,[23] included the annual examination in their recommendations as may be noted in Table 3 facing page 37. Burnham,[24] and Wood[25] also recommend the annual health examination.

One report on an extensive study of school health programs in a large number of cities in the country includes the recommendation that every school child should have a complete and thorough physical examination at least once in his school career.[26]

Whenever recommendations are made for periodic rather

[19] Children's Bureau, "Minimum Standards for Child Welfare," *Children's Bureau Publication* No. 60, 1919.

[20] American Public Health Association, "Report of the Committee on School Program," *American Journal of Public Health,* XII: 208, 1922.

[21] National Child Health Council, "Health for School Children," Office of Education, Washington, Government Printing Office, 1923.

[22] The Joint Committee of the National Education Association and the American Medical Association, "Health Education," N.E.A., 1924 (rev. 1930), p. 157.

[23] White House Conference III-C, "The School Health Program," N.Y., Century Co., 1932, p. 83.

[24] Burnham, W. H., "Health Examinations at School Entrance," *Journal of American Medical Association,* Vol. LXVIII, pp. 893-99, 1917.

[25] Wood, T. D., Rowell, H. G., "Health Supervision and Medical Inspection of Schools," Phila., Saunders, 1927.

[26] American Child Health Association, "A Health Survey of Eighty-Six Cities," American Child Health Association, 1925, p. xiv.

than annual examinations of school children, the basis for the recommendation usually given is a statement setting forth the need for safeguarding the quality of the examination even at the expense of frequency of examination. In some reports, as in that of the committee on Medical Service, White House Conference, III-C, the need for an annual examination is stressed but the opinion offered that a thorough health examination each year for each child is not possible in the near future and offers the following as an alternative:

"The Committee regards as most desirable the plan which provides for examination of alternate grades, plus new pupils and those selected by the teacher and nurse."[27]

The report of another committee of the same general division of the White House Conference, in which serious consideration was given to the question of school health examinations, includes the following statement:

"The annual examination is undoubtedly preferable if it does not result in superficial diagnosis. A thorough health examination—one that affords opportunity for real education at the time it is made—is fundamental to the whole health program."[28]

The report of an intensive study of the school health examinations in New York State, made by a special commission for the study of public health activities of the state, includes the following recommendations:

" . . . the present requirement for an annual physical examination of all school children be amended to provide for less frequent but more thorough examinations."[29]

[27] White House Conference, III-C, "Report of the Committee on Medical Service," *MS.* p. 6.

[28] White House Conference, III-C, "The Administration of the School Health Program," New York, Century Co., 1932, p. 22.

[29] New York State Health Commission, "Public Health in New York State," Albany, State of New York Department of Health, 1932, p. 319.

From the foregoing review of the literature on school health examinations, it appears that the following is a fair appraisal of the situation:

The trend is toward a fuller recognition of the responsibility of the schools for the health examination of children and a keener appreciation among medical and lay workers that the quality of the examination and the educational aspects of it must be *safeguarded.*

There is a trend toward the provision for an annual health examination for each child. However, when it appears necessary to sacrifice either frequency or quality of the examination, it is desirable that frequency be sacrificed in favor of a more thorough examination with adequate follow-up.

It would appear further that there is a definite movement among public health workers and social agencies in favor of an integration of services in the interests of the health of the child.

Standard No. 6: "A special room should be provided for the health examination."—All 52 members of the group assigned a value to this standard; 54 per cent rating it as *highly desirable,* and only one person protesting against it. The two comments made in connection with the rating suggest that this standard is one which, while desirable, is likely to be found in operation only where the school budget allows for the provision of the space and where it is believed that the size of the examining staff warrants such expenditure.

The recent study[30] of state legislation and regulations does not indicate that the standard has found its way into the law or state requirements; and the survey[31] of practice in 1930 by the Office of Education makes no reference to any question regarding special examination rooms.

Wood and Rowell[32] consider the size and kind of space needed

[30] White House Conference III-C, "The Report of the Sub-Committee on Legislation," *MS.*

[31] Rogers, J. F., "School Health Activities, 1930," *Office of Education Pamphlet* No. 21, 1931.

[32] Wood, T. D., Rowell, H. G., "Health Supervision and Medical Inspection of Schools," Phila., Saunders, 1927, pp. 219-21.

for the different types of examinations and inspections, and the specialists on school building construction[33] stress the importance of what is known as health service rooms; but for the most part the literature on school health programs, equipment, and facilities give the matter scant attention.

A wide range of literature consulted with reference to the question of special room for the health examination fails to reveal any definite recognition of the importance of such a room, except in one or two recent publications on school health programs and in the contributions of specialists in school building construction and management. For the most part, the subject receives scant attention and this supports the attitude of the commenting members of the rating group.

Standard No. 5: "The classroom teacher should make a preliminary test of vision and hearing."—Among the 33 standards failing to secure a median rating of *5*, in the present study, only two received a median rating below *4—Highly Desirable*. Standard No. 5, with a median rating of *3.5*, was one of them. Fifty-one of the 52 members of the group gave this standard a place, with 54 per cent of them rating it at least as good as *Highly Desirable*, and 18 per cent as low as *Questionable*. The three comments made by raters indicated that the opposition to the standard was due to the belief that the teachers were not prepared to give the tests provided for in the standard.

Since 1906[34] when this standard made its official appearance in the literature on school health, it has found its way into the statute books of 12 states.[35] Massachusetts alone provides that the Normal Schools shall instruct teachers to make the test.

A recent study on school health practices[36] reports that, in

[33] Strayer, G., Engelhardt, N., "Score card and Standards for Elementary Schools," p. 133, *MS.* (expected off the press in the summer of 1933)

[34] Office of Education Bulletin 1906, No. 3, p. 103.

[35] Rogers, J. F., "Statewide Trends in School Hygiene and Physical Education," *Office of Education Pamphlet* No. 5, 1930, pp. 12-13.

[36] Rogers, J. F., "School Health Activities, 1930," *Office of Education Pamphlet* No. 21, 1931, pp. 6, 14, 31.

the 464 cities above 10,000 responding to the questionnaire, the teacher was used to test the vision in slightly more than one-fourth of them and to test hearing in about one-sixth. In the three groups of cities included in the report, the number of teachers testing vision and hearing increases in direct ratio with the decrease in population. However, the per cent of cities in which the teacher gives the tests remains the same for all three groups.

In her study of the preparation offered by Normal Schools and other teacher preparation institutions to the classroom teacher for her work in the school health program, Spencer[37] found that the institutions in Massachusetts made definite provision for instructing the teacher in testing vision. The other institutions visited (all in the east) did not make such definite provision.

A recent communication[38] received by the writer from the Department of Education in the State of Michigan contains the report that in all of the Teachers Colleges of the state the classroom teachers are instructed in vision and hearing testing.

Probably one effective means of bridging the gap between a recognition of the need for teachers to assume the responsibility for testing vision and hearing and the mastery of the skills needed, may be found in the assistance offered by some state departments of health or education, and by national volunteer organizations. This help consists in sending skilled workers into the field to aid in the in-service preparation of teachers for the task of testing vision and hearing of children.[39]

Three recent standard texts on dealing with problems of school health not only recommend that the teacher test the

[37] Spencer, Mary, "Health Education for Teachers," Doctor's Dissertation, Teachers College, Columbia University, 1933, *MS.*

[38] Information in letter from Miss Reba Harris, State Supervisor of Health Education, State Department of Education, Lansing, Mich., January 1933.

[39] This practice is followed by the Board of Health of the State of New York and by the National Society for the Prevention of Blindness.

vision and hearing of school children, but provide detailed instruction in testing. The texts are respectively Wood and Rowell,[40] Terman and Almack,[41] and Averill.[42]

All of the conference studies on school health between 1910 and 1932 have stressed the desirability of teachers making at least a preliminary test of the vision and hearing of school children; as well as the need for preparation which will give a mastery of the testing skills. In 1910, the Ninth Yearbook of the National Society for the Study of Education[43] made the recommendation that the teacher assume a responsibility for testing the vision and hearing of children and prepare herself for the task. In this report is to be found also, a copy of the directions for making tests which the Massachusetts Board of Education furnished teachers and other school health workers.

Probably the most recent approval of teacher testing of vision and hearing to be found in conference studies is that contained in the report of the Committee on Medical Service in the schools of the White House Conference.[44] This report sets forth the status of the teacher in the health inspection of children, the importance of assigning the responsibility to her, her need for instruction in the techniques of testing and inspecting, and the delegation of the responsibility for that instruction.

The literature reviewed for this section revealed a strong approval of the practice of teacher testing of vision and hear-

[40] Wood, T. D., Rowell, H. G., *Health Supervision and Medical Inspection of Schools,* Phila., Saunders, 1927, vision, pp. 211, 216; hearing, 216.

[41] Terman, L. M., Almack, J., *The Hygiene of the School Child,* Boston, Houghton Mifflin Co., 1929; vision, pp. 263-66; hearing, pp. 221-35.

[42] Averill, A., *Educational Hygiene,* Boston, Houghton Mifflin Co., 1926; vision, pp. 307-12; hearing, pp. 331-48.

[43] Wood, T. D., "Health and Education," *Ninth Yearbook of the National Society for the Study of Education,* Part I, Bloomington, Ill., Public School Publishing Co., 1910, pp. 27-31.

[44] White House Conference III-C, "Report of the Committee on Medical Service in the Schools," pp. 5-16, *MS.*

ing of school children. Seven states have made mandatory provision for practice. Five others have made provisions of one sort or another for the delegation of the task as a whole or in part to the teacher. One state provides that the institutions for preparing teachers shall give the prospective classroom teacher instructions in making the tests. A recent survey of a group of such institutions in the east revealed the fact that such instruction was given in the institutions of the state in which the law required it. A recent survey of practice indicates that other health workers than the teacher tend to give the tests in question. While textbooks in school hygiene and conference studies on school health work recommend that teachers give vision and hearing tests and provide instructions for test making, there is no evidence that such instructions function in either pre-service or in-service preparation of the teacher for the testing task. The disapproval registered in the ratings and comments in the present study suggests the lack of at least one important step in the procedure, namely that of actually guiding the teacher in the mastery of the skill.

Standard No. 11: "The school should provide a complete dental examination for each child once a year."—All members of the rating group assigned a value to this standard; 75 per cent rating it at least as good as *Highly Desirable,* and 11 per cent giving it a place as low as *Questionable.* All five comments made by the raters reflected an opinion that the dental examination was not a school function.

The appearance of this standard in the literature on school health in 1906[45] marked the beginning of a period in which much attention was devoted to the care of the teeth, the establishment of dental clinics, and the introduction of dental examinations into the public schools.

Rogers'[46] report on present practice indicates that in about

[45] Burnham, W. H., "The Hygiene of the Teeth," *Pedagogical Seminary,* Vol. XIII: 293-306.

[46] Rogers, J. F., "School Health Activities," 1930, Office of Education Pamphlet No. 21, 1931.

one-half of the cities above 10,000 the school has assumed the responsibility for furnishing a dental examination to the school children; while his report on legislation[47] reveals three states with mandatory provisions on the examination of the teeth and fifteen in which a general examination is specified. It seems reasonable to assume that a dental examination would be included in a general examination.

Terman and Almack[48] definitely commit themselves in favor of the school furnishing not only the examination but also the treatment, while Wood and Rowell[49] recommend the examination and minor services.

Recent experiments and discoveries[50] in the field of dental care indicate a new emphasis on the problem. The literature on dental examinations[51] and dental care is assuming a wider scope than heretofore, with a tendency to minimize some of the phases of the school dental program which up to the very recent times received much attention. What the service of the school shall be in the future with reference to the very important phase of child health is not at the moment clear. However, a statement in one of the published reports from the White House Conference offers a pertinent suggestion. It is offered here because it epitomizes the opinions expressed in the recent articles on the subjects:

"Each child should have a complete dental examination annually. Such a program is rather heavy for the school to finance. However, the school can promote the program by education of the parents.

[47] Rogers, J. F., "Statewide Trends in School Hygiene and Physical Education," *Office of Education Pamphlet* No. 5, 1930, pp. 3-4.

[48] Terman, L. M., and Almack, J., *The Hygiene of the School Child*, Boston, Houghton-Mifflin Co., 1929, pp. 190-94.

[49] Wood, T. D. and Rowell, H. G., *Health Supervision and Medical Inspection of Schools*, Philadelphia, Saunders, 1927, pp. 232-236.

[50] Ready, M., and Rogers, J. F., "School Hygiene and Physical Education," Chapter 10, *Biennial Survey of Education*, 1928-1930, Office of Education, 1932.

[51] Hanke, L., "The Role of Diet in the Cause, Prevention and Control of Dental Decay," *American Journal of Nutrition*, January, 1931.

The following adjustment in a school dental program has proved satisfactory: a complete dental examination for each child in the kindergarten or first grade, and again in the fourth grade; careful inspection should be made during the intermediate and following years . . . all cases needing special attention being referred to the family dentist or to the dental clinic. . . ."[52]

Control of Communicable Disease

Four standards making provision for specific services in a program for the control of communicable disease failed to secure a median rating of *5* in the present study. A statement of each standard, the treatment accorded by the rating group, and a consideration of each follows:

Standard No. 28: "An isolation room should be provided in all schools."—One of the 52 members of the group failed to rate this standard; 33 (64 per cent) rated it at least as good as *Highly Desirable,* and 2 gave it a place as low as *Questionable.* Four comments were offered, all indicating skepticism regarding the desirability of the provision.

The provision of an isolation room as a means by which an infected child might be separated promptly from his classmates was recommended in 1927.[53] This recommendation has the partial support of the results of a special study made in 1925 by the New York State Board of Health.[54] The findings of this study, which was concerned with the high incidence of epidemics in the state institutions for children, indicated that among several important factors in the control of communicable disease prompt isolation of the sick was significant.

In a recent study of practice in the field,[55] it is interesting to

[52] White House Conference III-C., "The Administration of the School Health Program," New York, Century Co., 1932, p. 24.

[53] Wood, T. D. and Rowell, H. G., *Health Supervision and Medical Inspection of Schools.* Philadelphia: Saunders, 1927, p. 131.

[54] New York State Health Commission: "Public Health in New York State," Albany, New York State Department of Health, 1932, p. 410.

[55] Rogers, J. F., "School Health Activities," *Office of Education Pamphlet* No. 21, 1931.

note that the cities with a population of 100,000 or more hav the most complete program for the control of communicab disease in the schools. All but one of the 49 cities respondir to the questionnaire from the groups cited reported the prom isolation of cases of communicable disease. The other 415 citi responding for the cities of 10,000 or more population did n report isolation. It is possible that "isolation" as reported b the 48 cities did not necessarily mean the use of an isolatic room.

A survey of legislative provisions related to the control communicable disease in the schools reveals many requiremen for prompt exclusion, but no provisions for isolation of th infected child other than the requirement that he be sent hom immediately.[56] The Committee on Medical Service for th schools, White House Conference, III-C, emphasizes the in portance of early recognition of communicable diseases ar prompt exclusion of infected children,[57] but makes no referen to an isolation room.

The tendency to omit provision for an isolation room schools may be due in part to a lack of recognition of the in portance of isolating the child for the time intervening betwee the detection of suspicious signs of disease and the arriv of a conveyance for taking him home. It may, however, be du to the difficulty of safeguarding such a room from contributir to the spread of disease.

In the light of the sharp disapproval of the standard, th doubt expressed as to its desirability in the comments of th raters of the study, and the meager support for such a pr vision as revealed in the literature, it seems fair to assume th the acceptance of the provisions of Standard No. 28 will awa concrete evidence of the effective and satisfactory use of suc

[56] White House Conference, III-C, "Report of the Sub-Committee Legislation," pp. 42-76 *MS.*

[57] White House Conference, III-C, *School Health Program.* New Yor Century Co., 1932, pp. 85-89.

a room over the prevailing practice of sending the child home immediately.

Standard No. 33: "In case of pediculosis or scabies, home treatment slips should be sent home with the child."—All 52 members of the group rated this item, 42 (87.6 per cent) of them giving it a value of at least as good as *Highly Desirable,* and 2 rating it as low as *Questionable.* The four comments considered the provisions of the standard from four different viewpoints. They are repeated here because they reflect some of the reactions of health workers themselves to specific problems in the school health program. One director of a health program would amend the standard by adding "ringworm and impetigo," which suggestion merits consideration. Another would substitute "notice" for "slip," but since the "home-treatment slip" gives directions for caring for the disease at home, the substitution of "notice" which connotes a command would give an entirely new meaning to the standard. The rater, who found difficulty in giving a value to the standard without knowing the socio-economic status of the family to which it was to be sent, may have been thinking in terms of "notice" instead of "home-treatment slip." The comment of one who has had years of experience in the follow-up programs in school health offers the worthwhile suggestion that "A personal visit to the home is often more effective." This suggestion probably touches on the fundamental objection to the standard as stated.

A review of the state laws[58] bearing on the examination and inspection of school children (compiled for the White House Conference) indicates that many states provide for the notification of parents in all cases of the discovery and exclusion of children with communicable disease. The present standard, providing as it does for information on home treatment, is a step in advance of simply notifying the parent of the existence of the disease. The practice of some city boards of health includes,

[58] White House Conference, III-C, "Report of the Sub-Committee on Legislation," pp. 42-76 *MS.*

in the health education for the adult population, information on the home treatment of the infections cited in this standard.

Texts on school hygiene and problems of school health deal with the subject of infections usually with a recognition of the current public-health procedures, and with recommendations for the most part in accordance with the accepted procedures. Whether the school, with its regular contact with children and with lines of relationship already established between itself and the home, can find a means of controlling the infection in question through a program of parent education that goes beyond the "home-treatment slip" remains for experience and future experimentation to decide.

Standard No. 37: "The school should provide for toxin-antitoxin immunization."—All members of the group rated this standard, with 29 (55.7 per cent) giving it a place at least as good as *Highly Desirable,* and 12 (23 per cent) rating it as low as *Questionable.* In the 18 comments on this item the opinion was forcibly expressed that the function of the school in relation to this service was definitely one of *education,* and that inasmuch as the problem was clearly one of the pre-school period the responsibility for immunization must be placed elsewhere than on the school.

This standard, like the following one with which it is closely associated, was proposed in 1922[59] by a public health group. It is possible that the "demonstration immunization campaigns"[60] which were at that time getting under way had some influence on the proposal of the standard. This view is supported by an opinion expressed in one of the White House Conference reports,[61] which opposes the development of clinic agencies of the community as school activity, but conceded

[59] Turner, C. E., "A Health Program for Schools," *American Journal Public Health,* March, 1922, p. 296.

[60] State of New York Health Commission: "Public Health in New York State." Albany, New York State Board of Health, 1932, p. 414.

[61] White House Conference, III-C, "Report of the Sub-Committee Medical Service in Schools," p. 3. *MS.*

that when performed for their educational value they are acceptable. The example cited as the permissible use of the clinics is:

". . . administration of toxin-anti-toxin for a limited period as an educational demonstration."

A recent authoritative study of the epidemiology of diphtheria[62] concludes in part with the following statement:

"The immunization of 30 per cent or more of the children of the under-5 age group in addition to more than 50 per cent of children in the 5-to-9 age group has in several instances produced an immediate and striking decline in the diphtheria rate of the community as a whole."

A recent report of a special commission includes, as a recommendation for New York State, the following:

"For adequate community protection against diphtheria, it is estimated that not less than 35 per cent of children of this age group [under 5 years of age] should be so protected."[63]

A group report[64] on the study of control of communicable disease recommends that a continuous program of education be carried on until the most desirable method of making immunization a part of the routine care of infants by the family physician has become the rule. This same report reveals that the immunization for diphtheria is primarily a community and preschool problem and recommends that all children be immunized long before school age.[65] One objection to the acceptance of immunization as a school problem is expressed in the following:

[62] Godfrey, E. S., "Study of the Epidemiology of Diphtheria in Relation to the Active Immunization of Population Groups," *American Journal of Public Health,* March, 1932, pp. 237-56 (reprint of an address at Montreal, September 14, 1931).

[63] State of New York Health Commission: "Public Health for New York State." Albany, New York State Department of Health, 1932, p. 415.

[64] White House Conference, II-B, *Communicable Disease Control.* New York, Century Co., 1931, p. 217.

[65] *Ibid.,* p. 8.

"If offered as a routine service at school, the layman will be erroneously convinced that the age of 5 is soon enough to vaccinate. . . . Nothing would do more to defeat immunization in early childhood when it should be done."[66]

Standard No. 38: "This immunization may be given by the board of health."—Only one of the 52 raters failed to give this item a place. Twenty-seven (52.9 per cent) rated it as good as *Highly Desirable* and 3 gave it a place as low as *Questionable*. Most of the raters who had any comments on this point had covered it in what they had to say about the preceding standard. The opinions as expressed favored having the family physician give the immunization.

From the foregoing review of the literature on immunization against diphtheria, it is clear that in certain quarters, at least, the problem is recognized as a preschool one and that the responsibility of the school in the matter is best met through a continuous program of education favoring immunization as a part of the routine care of infants by the family physician. It appears that the temporary acceptance of the provision of the standard as a school function was founded on the belief that the immunization through the school was valuable as an educational demonstration. It appears further, that the practice of continuing immunization as a school routine tends to defeat its end in that it gives the parents a false sense of security, and thus leaves the children unprotected at the very time, when according to the findings of research, they most need to be protected.

Psychological Service and Mental Hygiene

Among the 33 standards failing to secure a median rating of *5* from the rating group were two that dealt respectively with provisions for determining the ability levels of children and provisions for the study of personality difficulties of children. The standards as stated, the treatment accorded them

[66] *Ibid.*, p. 8.

by the raters, and the consideration given them in recent and current literature follows.

Standard No. 8: "The school should provide adequate psychological service for determining the ability levels of children." Only one of the 52 members of the group failed to rate this standard, and no one rated it as low as *Questionable* while 39 (76 per cent) gave it a place at least as good as *Highly Desirable*. The only comment made related to the need for adequate follow-up services as well as for the examination. This comment appeared to be in no way a protest against the standard.

In the consideration of the literature on examinations for the purpose of determining ability levels, only those representative contributions that approach the question from the point of view of child health will be considered. The status of psychological testing in general is well established and the literature too well known to make an extensive review profitable at this time.

Since 1917,[67] when Burnham proposed this standard as a part of the health examination on school entrance, the recognition of the importance of the psychological examination in school health has grown. Within two years after Burnham's proposal, the Children's Bureau[68] incorporated the psychological examination as a part of the Child Welfare Standards; in 1922, the American Public Health Association[69] included the examination in their School Health Program; and in the following year, the National Child Health Council[70] not only accepted the psychological examination but evaluated it in terms of the mental hygiene of the school child. The Joint Com-

[67] Burnham, W. H., "Health Examinations at School Entrance," *Journal of American Medical Associations,* Vol. LXVIII, pp. 893-9, 1917, p. 10.

[68] Children's Bureau: "Minimum Standards for Child Welfare," *Report of the Children's Bureau Conference,* Department of Labor, Children's Bureau Publication No. 60, 1919, p. 438.

[69] Turner, C. E., "School Health Program," *American Journal of Public Health,* XII(3), March, 1922, p. 208.

[70] National Child Health Council: "Health for School Children," Office of Education, 1923.

mittee in its report[71] points out the value of the examination in the aid it affords teachers in the recognition of mental retardation as one of the common childhood handicaps to mental health.

"Group intelligence or group educational tests now make its possible . . . to ascertain whether a child can cope with the grading designated for him."

The Committee on Mental Hygiene[72] of the White House Conference, III-C, lay strong emphasis on pupil placement as an important factor in the mental hygiene of the child, and emphasize the need of using ability as one basis for determining the best placement. By best placement from a mental hygiene point of view is meant the one in which the child can undertake activities provided with every chance of being successful.

From another committee of the White House Conference comes the definite recommendation for mandatory legislation[73] providing for mental examinations of school children, the examinations to be made by those best fitted to do them. The recommendation just cited was made on the basis of the consensus of opinion of 45 school physicians in 25 states.

A summary of practice in the field in relation to the provision of psychological service and mental hygiene supervision is offered in the report of the Administration of the School Health Program.[74] The more general practice includes supervision from a central office with special psychologists (when the finances

[71] Joint Committee on Health Problems in Education, Thomas D. Wood Chairman: "Health Education—A Program for Public Schools and Teacher Training Institutions." Washington, D.C.: National Education Association, 1930, p. 88.

[72] White House Conference, III-C: *School Health Program.* New York: Century Co., 1932, p. 65.

[73] White House Conference, III-C: "Report of the Committee on Legislation," p. 12 *MS.*

[74] White House Conference, III-C: *The Administration of the School Health Program.* New York: Century Co., 1932, p. 18.

permit) assigned to the separate schools, with responsibility for 1000-1500 children each. In some schools, especially the high school, the practice is to relieve some of the teachers for part time and assign to them groups from the incoming classes and to provide for supervision by a psychologist or guidance director. This has possibilities for education of the teachers to whom the groups are assigned and who have the benefit of the advice of a supervising psychologist.

From this brief review it appears that the treatment accorded Standard No. 8 by the rating group does not find support in the literature approaching the question of psychological service from the viewpoint of child health.

Standard No. 9: "The school should provide a thoroughly trained mental-hygiene staff for the study of personality difficulties."—This standard was accorded treatment similar to that given to Standard No. 8, except that there was one protest against the item now under consideration. The comments indicate a lack of readiness to commit the school to the function proposed.

The Children's Bureau[75] in 1919, and the National Child Health Council[76] in 1923, strongly recommended mental-hygiene service in the schools and each conference study on child health since has also recommended the service. The report of the recent survey of practice made by the Office of Education[77] probably presents an accurate picture of the extent to which the service is provided in the field. The average expenditure by six cities for "mental hygiene" (which probably included the determination of ability levels of children) was 9½ cents per child. In the cities reporting for the highest population group, 21 reported that they provided supervision of the mental hygiene of the children, 18 reported psychological clinics, and a few scattered reports indicated the tendency to have a psy-

[75] Children's Bureau: *Op. cit.*

[76] Child Health Council: *Op. cit.*

[77] Rogers, J. F., "School Health Activities, 1930," *Office of Education Pamphlet* No. 21, 1931, pp. 9, 17, 25.

chologist or a psychiatrist or both on the staff. From the reports it would appear that there are ample means at hand for caring for abnormalities. Of the cities of the largest group (30,000 to 100,000), 19 reported psychological clinics and an effort at treatment was reported by 5. Cities in Massachusetts, Pennsylvania, and Wisconsin reported the use of the State psychologist or psychiatrist for examination of suspicious cases. In the next population group, 3 of the 34 cities reported as measures taken for the early discovery of mental disorders the use of clinics from the state or in the local community.

A most thoroughgoing review of the problem of mental hygiene as a school problem is presented by the Committee on Mental Hygiene[78] of the White House Conference. The report considers the meaning of mental hygiene in relation to the child's ability in self-expression, his adjustment, and his efficiency. It stresses the responsibility of the school for scrutinizing school organization, curriculum, pupil placement, methods of instruction, and social program in the light of the influence they have on the personality development and all-around mental hygiene of the child. In conclusion the report recommends a guidance program for children and psychological and mental hygiene supervision that will furnish assistance to the teachers and supplement their efforts in handling personality difficulties of children.

There is no recent published report of present practice in furnishing psychological and mental hygiene service to schools. Dr. R. A. Brotemarkle, of the University of Pennsylvania, has in typewritten form the summary of a partial survey of psychological service. An inquiry circulated by the American Psychological Association, entitled "Psychological Clinic Questionnaire," is now collecting information regarding the employment of psychologists in connection with universities, hospitals,

[78] White House Conference, III-C: *School Health Program.* New York, Century Co., 1932, pp. 61-82. (This is a résumé. The full report, 351 pp. in *ms.*, is available in the library of Professor Thomas D. Wood, Teachers College, Columbia University.

boards of education, and other agencies and institutions. In the course of a few months the data should be available.

Of the richness of periodical literature on mental hygiene in the school, the following were selected as representative and pertinent to the problem. That the teacher has a need to discover and recognize the difficulties of the child is reflected in the following conclusions:

"The teacher must know something about the equipment, both natural and acquired, in order to direct the child's emotional and instinctive life."[79]

"The detection of personality difficulties offers the greatest hope. . . . A child-guidance clinic affords the best opportunity for the school to do a preventive hygiene job."[80]

"Our best chance of understanding the child is by arranging situations in which he will reveal himself freely."[81]

One student of mental hygiene from the classroom teachers' point of view emphasizes the fact that most maladjusted pupils have to be handled by the classroom teacher[82] who needs help in the development of working knowledge and a systematic plan for meeting her problems. Another student of the problem, and a most successful director of a mental hygiene clinic, says:

"The fundamental duty of the teacher with respect to the mental hygiene of her pupils is to help them to form the habit of facing reality squarely. Such everyday symptoms as projection, regression, and day-dreaming will not be eradicated until the child is made to attach satisfaction to growing up. . . . This training . . . is the function of the teacher."[83]

[79] Wallin, J. W., "The Mental and Educational Hygiene of Instruction," *Baltimore Bulletin of Education,* Vol. VIII, May, 1930, pp. 181-3.

[80] Dexter, Elizabeth, "Treatment of the Child through the School Environment," *Mental Hygiene,* April, 1928, Vol. XII:358-65.

[81] Partridge, A. E., "Mental Hygiene from the Standpoint of the Teacher," *Baltimore Bulletin of Education,* Vol. VIII, May, 1930.

[82] Patry, F. L., "A Suggested Formulation of Mental Hygiene Case Studies," *Educational Method,* XII(1), October, 1932, pp. 19-25.

[83] Zachry, C., "Mental Hygiene and the Classroom Procedure," *Journal of the National Education Association,* October, 1931.

From this brief survey of representative literature on the problem of teacher needs, with respect to the guidance of the personality aspect of child health, it would appear that the indifference of the rating group was not justified and that the teacher has a real need for help.

Supplementary Feeding of Children

Standard No. 93: "In communities where study or observation established the fact that children are not receiving sufficient food, the school should furnish supplementary feeding at the period in the day when it seems to be most needed. The school will have to determine whether the need exists and what foods best meet the needs."—All 52 members of the group gave this standard a rating, with 34 (65.4 per cent) placing it at least as good as *Highly Desirable,* and 10 (19.2 per cent) giving it a rating of *Questionable.* The 8 comments reflected the opinion that the school function did not include supplementary feeding of children. In theory, there appears to be a general trend away from the feeding of children in school. The most recent report[84] on the theory, and one that included practice preceding the depression period, indicates that institutions and agencies were recognizing the need to handle the feeding of children together with the feeding of the family; and to render educational service to the family as a whole. The committee responsible for the report was not ready to give full endorsement to the practice of providing supplementary feeding for children until experimental evidence indicated the wisdom of such a procedure from the educational point of view. This point of view was supported by the report[85] of another group working independently of the committee cited but arriving at much the same conclusions.

It would seem that when the time and situation favor a dispassionate view of the problem of school feeding, the tendency

[84] White House Conference, I, *Nutrition Service in the Field,* New York, Century Co., 1932.

[85] White House Conference, III-C, *School Health Program,* New York, Century Co., 1932, pp. 117-125.

is to recommend that the function of the school remain strictly educational in character. Times of stress, however, such as the present, are not conducive to calm thinking, especially when school children give evidence of a serious lack of food. The settlement of the question of school feeding of children calls for the united efforts of all community agencies.

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CHAPTER VI

THE HYGIENE OF THE SCHOOL PLANT

Among the standards which in the present study failed to get a median rating of *5*, from those responsible for school health programs, there were nine standards relating to the hygiene of the school plant. The median rating of *4, Highly Desirable*, accorded to 8 of them and *4.5* to the ninth, might be considered as indicative of the strength of the support the standards received. The opposition was reflected in protests ranging from 1 to 11 against individual standards. The specifications for lighting the classroom and the provision for showers in elementary schools drew the least fire; the maximum protest was directed against the provision for waxing the classroom floors.

1. Provision of Playgrounds for High School Pupils

Standard No. 42: "For high schools, no site less than 12 acres will suffice for the outdoor activities of boys and girls."—Forty-nine of the 52 members of the group rated this item: 39 gave it a place at least as good as *Highly Desirable;* and 3 rated it as low as *Questionable.* Judging from the comments, especially those made by the protesting members of the rating group, the failure of this standard to get a median rating of *5* was due in a measure to beliefs held by the protesting raters on what constitutes adequate high school play space. It is clear that those beliefs do not coincide with the provisions of the standard in question.

Standard No. 42 is an outgrowth of a proposal appearing in the literature on school health in 1880.[1] At that early date the modest proposal was for a minimum provision of one acre for a school playground. Antedating that was the questionnaire

[1] *Report on the U. S. Commissioner of Education,* Office of Education, 1880, p. CCLV.

study by the Office of Education, of the community facilities for outdoor recreation.[2] The increased interest in athletics for the youth, and in the play activities of physical education, was paralleled by an effort to secure school playgrounds that these activities might be incorporated into the school program. Some of the results of that effort are given below. The data were taken from a recent study by Rogers[3] and include only the figures given for high schools. It will be noted that the figures relate only to the actual provision of playgrounds and do not cover the question of acreage. Cities classified as to population groups report the provisions of playgrounds for high schools in the following proportions:

68% of the 49 cities responding from the population group of 100,000 or over;

76.6% of the 96 cities replying from the group between 30,000 and 100,000;

64% of the 303 cities reporting for the group between 10,000 and 30,000;

No report of high school playgrounds from cities under 10,000 population.

In 1930, Rogers prepared another pamphlet dealing with the legislative aspect of school problems.[4] In this pamphlet, school playgrounds received attention. His conclusions are based on data secured from a study of legislations and state regulations. They are as follows:

"With the passing of the physical education class as an end in itself, and an attempt to furnish the pupil with an opportunity to practice what is taught him, there follows the need for larger and better surfaced playgrounds. . . ."

[2] *Report of the U. S. Commissioner of Education,* Office of Education, 1867, pp. 824-828.

[3] Rogers, J. F., "School Health Activities, 1930," *Pamphlet* No. 21, *Office of Education,* 1931, pp. 9, 17, 25, 28, 30.

[4] Rogers, J. F., "Statewide Trends in School Hygiene and Physical Education," *Pamphlet* No. 5, *Office of Education,* 1930, p. 8.

Rogers continues:

"The need for space and supervision of physical activities extends beyond the school. They are as much a recreational need of the community."[5]

In a recent study, nation-wide in scope, of legislation and state regulations regarding school playgrounds, Ready[6] reports on the acreage proposed or required. In the 8 states making legal provision for high school playgrounds, the requirement was from 1 to 6 acres; while the areas recommended for the same purpose by state boards of education ranged from 2 acres to 10.

Some of the liberal provisions for play space recommended by state boards of education, and reported in Ready's study, are: Maryland, 5-12 acres; Massachusetts, 6-15; Florida, 10-15; Texas, 8-15; Arizona, 5-20; and Arkansas, 5-10 acres; with California, 20, Alabama, 15, and Indiana, Montana, and North Carolina, 10 acres each.[7]

In other studies that deal with the size of playgrounds for high school, the following recommendations seem pertinent:

"Five acres is the minimum for a school of 500 pupils. Nothing short of 12 acres will suffice for larger schools. Even the school of 500 pupils requires a larger site if it is to include a general athletic field with accommodations for spectators. A 12 to 15 acres site is always desirable."[8]

"The standards for school sites that are widely acceptable to-day . . . 10 to 12 acres for junior high schools and 20 acres for senior high schools . . . the accepted minimum standard for playground area per pupil enrolled, is 100 square feet per pupil."[9]

The Sub-committee on Legislation of the White House Con

[5] *Ibid.*

[6] Ready, Marie M., "School Playgrounds," *Office of Education, Pamphl* 1930, No. 10, p. 39.

[7] *Ibid.*, pp. 8-9.

[8] Report of the Committee for Reorganization of Secondary Educatio *Bulletin* No. 23, *Office of Education*, 1922, p. 9.

[9] Report of the Schools of Holyoke, Mass., *Division of Field Studie* Institute of Educational Research, Teachers College, Columbia Universit 1930, p. 108.

ference suggests that it is better to express the size of playgrounds provided by state regulation in minimum requirements as those of Delaware and New Jersey.[10] Delaware requires a minimum of two acres with an additional 250 square feet per pupil. The maximum is 10 acres.[11] New Jersey has a minimum of 150 square feet per pupil, with a maximum of 5 acres.[12]

Recommendations made in other studies regarding the size of playgrounds for high schools are: a minimum of 100 square feet per pupil;[13] fifteen to twenty acres;[14] ten to twelve acres;[15] twelve acres for high school sites;[16] and fifteen acres for a high school.[17]

From a survey of the foregoing studies, it would appear that the recommendations for acreage of high school playgrounds are based upon estimates of the needs for general physical activities and athletics. The recommendations made in school surveys, and books giving standards for schools, seem to run higher than the recommendations made by state boards of education, while these in turn run higher than the legal provisions in the several states. In the absence of convincing studies of the uses made of the playgrounds now provided, probably no better method of determining the desirable acreage is available than the estimate of specialists.

[10] White House Conference, III-C, Report of the Sub-Committee on Legislation, p. 2. *MS.*

[11] School Laws of Delaware, 1925, Article VIII, Sections 50-52.

[12] School Laws of New Jersey, 1925, Article VII, Section 126.

[13] *American School and University Yearbook,* Vol. III, 1930-31, New York, American School Publishing Company, p. 30.

[14] Moehlman, A. B., *Public School Plant Program,* New York, Rand McNally, 1929, p. 144.

[15] Strayer, G. D. and Engelhardt, N. L., *Standards for High School Buildings,* Teachers College, Columbia University, 1924, p. 10.

[16] Engelhardt, Fred, *Report of the Survey of the Public Schools of Superior, Wisconsin,"* Minneapolis, Minn., University of Minnesota, 1925, p. 148.

[17] Hart, Frank, and Peterson, L. H., "A School Building Survey and School Housing Program for San Rafael, Calif.," Bureau of Research in Education, Study No. 8, University of California, 1922, p. 17.

In the light of the recommendations just reviewed, the provisions of Standard No. 42 are not excessive, at least for a large high school. It does seem advisable, however, to express standards for playgrounds in terms of minimum acreage, with provision for increasing the acreage on the basis of a prescribed number of square feet per pupil. Whether the increase shall be on the basis of 100 square feet per pupil, 180 square feet, or 250 square feet, no better authority seems to be available than estimates made by specialists in the field of school planning. There seems to be, however, among these specialists, a tendency toward the opinion that it is more economical to err on the side of providing too large a playground than one that is too small.

2. Construction and Use of School Buildings

Standard No. 44: "All school buildings should be constructed of fire-resistive material, and should be not more than two stories above the ground floor. The basement should be used only for housing the heating plant and other similar services."
—All 52 members of the group rated this standard; 43 gave it a place at least as good as *Highly Desirable;* and 6 rated it as low as *Questionable.* A study of the comments of the raters revealed no objection to the construction of fire-resistive buildings; but a small positive protest was made against the limitations on height of buildings, and the use of the basement.

There is a possibility that the use of the term "ground floor" in the standard may have influenced the rating of the standard by some members of the group. The definition of the term "ground floor," or the substitution for it of a descriptive term such as "grade level at the two main entrances" would probably have served to clarify the provisions of the standard.

Rater "F" comments on the standard as follows: "A properly constructed building may be served adequately by elevator to any number of stories." If by "properly constructed buildings," Rater "F" referred to Type A Construction as define

by the American Institute of Architects,[18] or Type 1 as defined by Sahlstrom,[19] the objection to the limitation on height was well taken, since buildings meeting the standards outlined for these two types are pretty thoroughly safeguarded against safety hazards so far as fire is concerned, and have no restrictions on height. Reeves'[20] study, however, indicates that of the tall school buildings in use, only a very small percentage meet the construction requirements of Type A. A review of the studies by Reeves and Ganders, and that by Sahlstrom suggests the possible dangers from a false feeling of security so far as fire hazards are concerned through the loose use of the term "properly constructed."

The first report of the U. S. Commissioner of Education, for 1867,[21] contained the forerunner of Standard No. 44, that has appeared in some form or other in successive reports. It proposed "fire-proof" material for the building of school houses. In the report of 1873,[22] a proposal was made that school buildings be not more than two stories in height. Sixty years ago, feeling ran strong in opposition to school buildings that kept "children too near the sky." The fact that over 80 per cent of the raters in the present study endorsed the limitation on height of school buildings, indicates that the opposition to tall school buildings has not entirely disappeared.

[18] These types may be found quoted in Reeves, C. E. and H. S. Ganders, "School Building Management," Teachers College, 1928, p. 316; and 2nd Report of the National Committee for Chamber of Commerce Coöperation with the Public Schools, 1921, p. 33.

[19] Sahlstrom, J. W., "Code Control of School Building Construction in American Cities," Doctor's Thesis, 1933, Teachers College, Columbia University, *MS.*

[20] Reeves, C. E. and H. S. Ganders, "School Building Management," Teachers College, Columbia University, 1928, p. 316.

[21] *Report of the U. S. Commissioner of Education,* Office of Education, 1867, p. 543.

[22] *Report of the U. S. Commissioner of Education,* Office of Education. 1873, p. CXXXI.

Reeves and Ganders report on the use of fire-resistive con struction in school buildings. The data regarding 7,150 school in 427 cities were assembled, and a comparison was made be tween the standards set up by the American Institute of Archi tects for the several types of fire-resistive buildings, and th buildings in use (as revealed by Reeves and Ganders' study) They report that almost ⅔ of the buildings studied differed i essentials from the types of fire-resistive buildings as define by the American Institute of Architects.[23] Reeves and Gander recommend that all buildings of three or more stories in heigh follow the standards set by the American Institute of Archi tects for Type A building (one constructed entirely of fire resistive material), or Type B (fire-resistive construction i walls, floors, and ceilings, but with wood or composition floo surface, and wood roof construction over fire-resistive ceiling).[24] Strayer and Engelhardt recommend that the question of heigh of building be decided in the light of the degree to which th construction of the building approximates fire-resistiveness, an that buildings of Type E (frame buildings, constructed of woo above the foundation) and Type D (masonry walls, but othe wise ordinary or wood joist construction) be limited to on story.[25] Hard-burned brick, stone or reënforced concrete ar listed[26] by Strayer and Engelhardt as accepted by architect and engineers as the best fire-resistive materials. They recom mend further that no building be more than three[27] stories abo the ground floor, unless it is provided with adequate elevat service. The National Fire Protection Association recommend

[23] Reeves, C. E. and Ganders, H. S., *School Building Management,* Ne York, Bureau of Publications, Teachers College, Columbia Universit 1928, p. 316.

[24] *Ibid.*

[25] Strayer, G. D. and Engelhardt, N. L., *Standards for High School Buil ings,* New York, Teachers College, Columbia University, 1924, p. 15.

[26] *Ibid.,* p. 16.

[27] *Ibid.,* p. 15.

low buildings, preferably not more than two stories above the basement.[28]

The most recent study on the construction of fire-resistive buildings was made by Sahlstrom.[29] He investigated the code control of school building construction in 100 American cities, and proposed standards designed to improve the provisions of existing codes. Sahlstrom defined "fire-resistive" as that form of construction which provides the most efficient protection against fire. Later on he clarifies this definition by specifying types of fire-resistive construction. He found that 1/5 of the total number of codes studied gave sanction to the three-story building of non-fire-proof construction, and that slightly more than ¾ of the codes limited the height of non-fire-resistive construction to two stories.

He proposes four construction types of school buildings to replace the five types recommended at an earlier date by the American Institute of Architects. Type I of Sahlstrom's set differs from Type A of the earlier set constructed entirely of fire-resistive materials in that it allows combustible construction for built-in and movable equipment, trim, furniture, and floor surfaces; and that it provides for fire-resistive protection of openings in the exterior of the building. According to Sahlstrom, there are no restrictions on buildings of this type so far as location, height or undivided floor space are concerned.

Buildings of Type II of Sahlstrom's set differ from Type I in that that the roof construction may be of wood if properly protected on the top and separated from the floors below by a fire-resistive ceiling; in addition, it omits the fire-resistive protection of exterior openings. Sahlstrom would not restrict the height of buildings of this type, but would restrict the location

[28] Forster, W. H., *Fire Protection for Schools,* National Fire Protection Association, 1919, p. 5.

[29] Sahlstrom, J. W., "Code Control of School Building Construction in American Cities," Doctor's Thesis, Teachers College, Columbia University, 1933.

by placing it outside the fire limits. Buildings of Type III hav fire-resistive construction in all corridors and inside stairway They differ from the other two in that they have combustib construction in floors, partitions and roof. The height of suc buildings, Sahlstrom would limit to two stories; while buildin of Type IV (frame buildings) he would limit to one story ar temporary use. In this connection, Sahlstrom defines "story"

"Where the main first floor line is three (3) feet or more abo the grade line at any entrance or any exit from any story above t basement, the basement will be rated as the first story. Stories ov 15 feet high measured from floor to ceiling, will be counted as tv stories."

Reeves and Ganders offer evidence to show that practice school building construction has not followed the lines recor mended by the American Institute of Architects either for fir resistive construction or for the height of buildings construct of non-fire-resistive materials. Sahlstrom's evidence indicat that code requirements of the cities studied failed to restri the height of buildings of non-fire-resistive construction in least 20 per cent of the cases. While no attempt was made locate the raters with reference to the cities investigated in t studies just cited, it seems reasonable to suppose that the sar ples in these studies were sufficiently representative to justi the inference that existing practices and code provisions relat to school building construction may have had some influence the lack of agreement on height of buildings among the scho health specialists.

The comment of Rater "F," and the review of evidence ar opinions in the literature on school building construction i dicate that the statement of the standard probably should ha included the definition of "story," the substitution of "gra level at entrance or exit" for the term "ground floor," and differentiation of the provision on height in relation to the ty of fire-resistive construction.

It seems reasonable to suppose that the restatement of t

standard with the changes indicated would result in a median rating of *5* for the standard construction and height of school buildings. A follow-up study of agreement, which is now under consideration and which will be reported at a later date, will test the validity of this opinion.

In regard to the uses to which the school basement may be put, a well-known set of standards for school buildings contains the following statement:

"No educational or social space should be located below the level of the surrounding grade."

The standard goes on to state specifically that the use of the basement should be limited to the housing of the heating plant, fuel storage, janitorial work rooms, etc.[30] The objections, as stated in this contribution to the subject, are that basement rooms are generally damp, the light is inadequate, and dust is too readily swept into it from the surrounding grade. The recommendation is made that when the building is constructed, care should be taken to construct basement rooms in such a way that they cannot be converted into classrooms in the event of future congestion.[31] A companion recommendation coming from the pen of the authors just quoted, is:

"The taxpayer should not be required to make any more investments in basements with the expectation that they should be used for school purposes."[32]

In his study of code control of building construction, Sahlstrom found that only 9 of the 100 codes studied prohibited the use of basements for instructional purposes.[33] He quotes,

[30] Strayer, G. D. and Engelhardt, N. L., *Score Card and Building Standards for Elementary Schools*, New York, Teachers College, Columbia University, 1933, p. 17.

[31] *Ibid.*, p. 37, *MS.*

[32] Engelhardt, N. L. "School Building Programs in American Cities," New York, Bureau of Publications, Teachers College, Columbia University, 1928, p. 9.

[33] Sahlstrom, *op. cit.*, p. 189.

in part, the code of one city that does prohibit such use of the basements:[34]

"Classrooms, recitation rooms, or study rooms shall not be allowed in basements less than 12 feet in height, nor where the floor is more than 3 feet below the level of the surrounding sidewalk at the nearest entrance."

According to Sahlstrom's definition of "story" a room with a 12 foot ceiling, and a floor less than 3 feet below the surrounding grade would be counted as the first story.[35] The city just now referred to prohibits the use of basement rooms for gymnasia. Sahlstrom makes an objection to the use because dust is swept into the rooms from the surrounding grade.

In the literature reviewed, no sanction could be found for the use of the school basement for other than boiler rooms, ventilating plant, fuel storage, and janitorial work rooms. There is a consensus of opinion among the school hygienists, as well as among those who are studying specifically the construction and use of school buildings, that the basement rooms should not be used for educational rooms, or for lunch rooms or toilet rooms. School surveys reveal that such uses continue to be made of basement rooms, especially in situations where it seems expedient or necessary to utilize old school buildings, while the building program lags, or fails to keep up with the increase of school population. Survey reports revealing such conditions almost invariably include a recommendation that such uses be discontinued at the earliest possible date.

It appears that with an agreement on what constitutes a "story" and a "basement," with an understanding of different types of fire-resistive construction together with an understanding of the relation of these factors to the safety and health of children, it is entirely possible that acceptance by the rating group would have been secured for Standard No. 44.

[34] *Ibid.*, also School Building Code, St. Paul, Minn., 1930, p. 86.
[35] Sahlstrom, *op. cit.*, p. 190.

3. Classrooms

Standard No. 58: "Rooms should be rectangular, with windows on the long side, and doors opening outward or swinging in both directions."—Only 48 members of the group rated this standard; 38 giving it a place at least as good as *Highly Desirable,* and 3 rating it as low as *Questionable.* This standard, like the preceding one, suffered in the rating because it contained more than one item. The comments indicate that the raters were willing to accept the shape of the room and the window placement; but all four comments protested against the swinging doors. All voiced the opinion that swinging doors were dangerous.

The item on window placement appeared in the literature on school health as early as 1872.[36] The question of how the classroom door should be hung received much attention in the decade following 1910, in the discussions on fire-protection in school houses.

The provision that doors open outward or swing in both directions had the support of the National Fire Protection Association,[37] and at least one authority on school building standards.[38] In a recent revision of standards, the authority just cited says:

"Classroom doors should swing in both directions or outward into the corridor. Doors swinging into the corridor to be arranged so that they will not interrupt corridor passage. They should move with the direction of the traffic toward the building exit."[39]

[36] *Report of the U. S. Commissioner of Education,* Office of Education, 1872, p. LXXV.

[37] Forster, W. H., *Fire Protection for Schools,* National Fire Protection Association, 1919, p. 14.

[38] Strayer, G. D. and Engelhardt, N. L., *Standards for Elementary School Buildings,* New York, Teachers College, Columbia University, 1924, p. 33.

[39] Strayer and Engelhardt, "Score Card and Building Standards for the Elementary School," Teachers College, Columbia University, 1933, pp. 29, 83, *MS.*

In a recent revision of their building code, the National Board of Fire Underwriters make the following requirement:

"The doors of regular doorways shall be so hung and arranged that when opened they shall not in any way diminish or obstruct the required width of the passageway, hallways, stair, or other means of exit."[40]

The hazard of traffic interference in the corridor by classroom doors opening outward is partially reduced by the provision that the door move with the direction of the traffic toward the outer exit, but not entirely. A recent text on the school plant suggests another arrangement for hanging the classroom doors:

"To prevent interference with corridor traffic and to provide free exit for children from classrooms, it is necessary to hang doors so they will not project into the corridors. The best way is to hang the door from the inside of a breather wall, so that in case of emergency the door swings into the recess caused by the breather wall. This is the only method compatible with safety. If no breather wall is used, the door must project into the corridor, and must be hooked against the wall."[41]

The arrangement of doors suggested in the quotation just given has been tried out with success in many of the newer buildings.

That there is a possibility of accidents in doors swinging from both directions is suggested in the practice adopted by most restaurants and tea rooms, of providing two doors for the waiters, an exit and an entrance. The writer, however, has been unable to discover any study on the frequency of accidents from swinging doors on classrooms. A careful, unbiased study on this question might be expected to establish the validity of the opinion of the protesting members of the group participating in the study, or else, to allay their fears.

[40] *Building Code,* National Board of Fire Underwriters, Fifth Edition, 1931, p. 67.

[41] Spain, C. L., Moehlman, A. B. and Frostic, F. W., *Public Elementary School Plant,* Rand McNally and Co., 1930, p. 263.

Standard No. 60: "A battery of windows should be placed for left-hand lighting, and should reach within six inches of the ceiling and three feet of the floor. The windows should be not more than 12 inches apart. There should be a dead wall space of five feet at the front of the room."—Forty-nine of the 52 raters gave this standard a place on the scale of values; 47 of them gave it a place at least as good as *Highly Desirable,* and 1 as low as *Questionable.* The comments throw little light on the reason for the lower median rating. The protesting rater made no comment. At this point it might be noted that Standard No. 60 was cited on page 85 as the one standard in the group of 33 for which evidence strongly favored acceptance.

From a study of the ratings received, and the comments made by the raters, it appears that Standard No. 60 failed to secure the highest rating, not because of the strength of the protest against it. What factors did influence the prevention of agreement is not clear at this time. Conference with teachers, administrators and health workers in progressive and semi-progressive schools reveal the growing belief that with the informal arrangement of tables and chairs in the progressive classroom, and with the frequent change of position of the children, left-hand lighting of classrooms is no longer important. The soundness of such a belief and the arguments through which it could be reached seem seriously open to question. The comments of raters do not reveal such a belief, and the presence of the belief among the educators interviewed do no more than suggest the possibility of such a belief among the raters.

The proposal for left-hand lighting appeared in the first report of the United States Commissioner of Education.[42] It has reappeared frequently and regularly in the literature on school health. One of the most recent pronouncements comes from the Illuminating Engineers:[43]

[42] *Report of U. S. Commissioner of Education,* Office of Education, 1867, p. 547.

[43] *Standards for School Lighting,* Illuminating Engineers Society, 1932, p. 21.

"Most children write with their right hand, hence it is considered desirable to place the windows at the left of the pupil to prevent shadows on the work when writing."

The White House Conference, Committee on the Education of the Partially Seeing Child, makes the following recommendation:[44]

"What is ideal for the normally seeing child is ideal for the partially seeing."

Then follow specific recommendations that the light come from the left of the pupil; that the glass area reach to within six inches of the ceiling; that the bastions be as narrow as possible; and that to prevent glare on the blackboard, the windows stop at a line seven feet from the front wall of the classroom.

The Illuminating Engineers,[45] and Ayers, Williams, and Wood[46] agree with the White House Conference on the need for narrow bastions (mullions) to prevent shadows.

The Illuminating Engineers make the following recommendation regarding the height of the windows:[47]

"Since it is desirable that the variation in illumination between the two sides of the room be as small as possible, the top of the window glass should be as high above the floor as practicable."

This is an agreement with Rapeer,[48] who says that one-third of the light comes from the upper fourth of the window.

The Illuminating Engineers[49] further recommend that windows should stop at about the line of the front seats or between

[44] White House Conference, *Special Education,* New York, Century Co., 1931, p. 141.

[45] Illuminating Engineers Society, *op. cit.,* p. 2.

[46] Ayers, M. B., Williams, J. F., and Wood, T. D., "Healthful Schools," Boston, Houghton Mifflin Co., 1918, pp. 32-34.

[47] Illuminating Engineers Society, *op. cit.,* p. 21.

[48] Rapeer, L. W., "Educational Hygiene from the Pre-School Period to the University," 1915, pp. 339-40.

[49] Illuminating Engineers Society, *op. cit.,* p. 22.

4 and 8 feet from the front wall. This is in accord with Ayers, Williams and Wood,[50] and the White House Conference.

All the authorities quoted agree that the windows should be about three feet above the level of the floor.

A recent review of current practice in lighting school rooms summarizes the codes and standards for 20 states and a few large cities. In 19 of the states, the height of the window sill is specified. The least permissible height is 2 feet, 6 inches; the greatest is 4 feet. The distance from the ceiling to the top of the window is specified in all; the majority require that the distance be not more than 6 inches; the greatest distance permitted is 18 inches for a room with a 14 foot ceiling.[51]

Hopkinson's study, which was planned primarily for the determination of the ratio of glass area to floor area, included a recommendation that the light should come from the left of the pupil.[52]

The use of the skylight as an alternative of left-hand lighting was suggested in the comments of one of the raters. The Illuminating Engineers[53] dispose of the matter as follows:

"Skylights or windows in the ceiling are not generally considered practicable for school rooms since they are difficult to keep clean, and have to be of special construction."

The review of the foregoing literature indicates that the provisions of the several items included in Standard No. 60 are in agreement with the recommendations of specialists in the field of lighting, as well as those of specialists in child hygiene and school hygiene. It would appear also that the failure of the standard to secure a median rating of *5* from the school health specialists was probably not due to the presence of a controver-

[50] Ayers, M. B., Williams, J. F., and Wood, T. D., *op. cit.*, pp. 32-4.

[51] Ives, J. E., "A Review of Current Practice of the Lighting of School Buildings in the United States," *American School and University*, 1929-30. 1930, pp. 286-89.

[52] Hopkinson, G. M., "Natural and Artificial Lighting of Schools," *American School Board Journal*, Oct., 1930, pp. 41-45, 135.

[53] Illuminating Engineers Society, *op. cit.*, p. 22.

sial point in the standard, since there was but one protest, and that unsupported by a comment. The reason for the lack of agreement may be revealed in subsequent study.

4. Toilet and Bathing Facilities

Standard No. 73 : "The toilet bowls should be of porcelain with automatic flush, and should be provided in the ratio of one seat for every 15 girls, and one for every 25 boys. One urinal should be provided for every 15 boys."—Two members of the group did not rate this standard; 39 gave it a place at least as good as *Highly Desirable;* and 5 rated it as low as *Questionable.* The comments of the 5 protesting members revealed the fact that their objections were directed against the automatic flush, because of increased cost and possible negative educational value, and against the ratio, which was considered higher than necessary and was objectionable in that it entailed increased supervision.

The first appearance of a standard on toilet facilities was in 1880,[54] at which time the provision of water closets was strongly recommended for all schools. The questions of materials of construction, the provisions for flushing, and the ratio of fixtures have claimed attention of plumbing and building specialists as well as that of educational administrators and school health workers. The most recent standards on the materials to be used for the bowls agree on the use of genuine vitreous china (tested by the Government standard red ink test,[55] for resistance to absorption) instead of porcelain.[56]

The question of the automatic flush is still receiving atten-

[54] Circular of the Office of Education, No. 4, 1880, p. 38.

[55] Circular of the Bureau of Standards, No. 310, 1926, Specification No. 448, Washington, D.C., Department of Commerce, Bureau of Standards.

[56] Thomas, M. W., "Public School Plumbing Equipment," 1928, p. 38; Spain, Moehlman, and Frostic, *Public Elementary School Plant,* 1930, p. 366; Womrath, *Efficient Business Administration,* 1932, p. 199; and Strayer and Engelhardt, "Score Card and Building Standards for the Elementary School," 1933, *MS.* p. 66.

tion. Reeves and Ganders object to it on the ground that it is not practicable.[57] Thomas criticises it from the standpoint of the increased mechanical parts which must be kept in repair, and because "a child denied the opportunity of flushing a toilet, is denied the practice of a habit which he should acquire."[58] Spain, Moehlman, and Frostic, as well as Strayer and Engelhardt, on the other hand, are now recommending individual automatic flush.

Opinions on the ratio of toilet fixtures to enrollment differ, and judging from reports, practice differs in an equally marked degree. Oakland, California, provides 1 toilet bowl for boys and 1 urinal for every *two* classrooms, and 1 bowl for girls for every classroom.[59] Thomas[60] reviews the ratios selected by Minneapolis, Cleveland, Pittsburgh, and New York City. In each city the ratio was selected or retained on the basis of an objective count on the use made of the fixtures installed.

The Minneapolis method of making the count is the only one described by Thomas. In it, observers were stationed in the several toilets, for stated periods during several days, and counted the number of children making use of the toilets during those periods. Probably the methods used by the other cities making the study were similar.

A significant item revealed by Thomas in his review of the ratios in use, is that a single ratio probably does not serve both large and small schools equally well.[61] His charts of ratios show that Pittsburgh and Minneapolis provide 1 toilet seat for every 30 boys in schools smaller than 300 enrollment, and 1 for every 60 boys in larger schools, one urinal for 12 boys in the smaller schools, and 1 for 24 boys in the larger; 1 toilet bowl for 15 girls in the smaller schools and 1 for 30 girls in the larger. The

[57] Reeves and Ganders, *op. cit.*, p. 178.

[58] Thomas, "Public School Plumbing Equipment," pp. 66-67.

[59] "Book of Standards for the Erection of Public Schools," Part 1, Oakland Public Schools, 1926, p. 57.

[60] Thomas, *op. cit.*, pp. 52-56.

[61] Thomas, *op. cit.*, pp. 54-56.

ratios for the Ohio city were a trifle lower than those for Pittsburgh and Minneapolis, but in the former city a further differentiation of ratios was made for schools of 200 and those of 100. New York did not differentiate ratios for schools of varying size, probably because the city has few schools with less than 300 enrolled. The ratio in New York City is 1 urinal for 40 boys, 1 toilet seat for 120 boys, and 1 toilet bowl for 60 girls.

A more recent study of ratios was made in 80 selected schools in Wisconsin. The schools varied in type and size from a small high school of 137 enrollment to one with an enrollment of 1,522, and from an elementary school with 168 pupils to a junior high school with a capacity of 1000. The study was carried on by means of a questionnaire sent out from the State Department of Education. The data asked for included the number and types of facilities provided, the condition of the fixtures, the school enrollment, and the use made of the fixtures at the periods in which use might be expected. Sixty-eight of the 80 schools furnished information on the first three items; a little over 50 per cent of the replies on the last item were usable. The conclusions disregarded the difference in size of the schools in setting up ratios, but differentiated in ratios on the basis of age of the children. In the elementary school and junior high school, one closet was recommended for 25 girls, while in high school the ratio was one closet for 40 girls. For boys, the ratios were 2 toilet fixtures for 55 boys in high school, with 5 urinals to every 3 closet seats; in elementary school and junior high school, the toilet fixtures were 2 to every 35 boys, with twice as many urinals as toilet seats. As a means of getting information on the provision of equipment, and the existing ratios of toilet fixtures to enrollment, this study is interesting. As a method of determining what the minimum ratios should be, it leaves much to be desired, as Schmidt[62] points out. It does direct the attention of administrators and others, how-

[62] Schmidt, H. W., "Sanitary Conveniences in Schools," *American School Board Journal,* January, 1930, pp. 53-56, 162, 164, 166.

ever, to the possible need of differentiating ratios on the basis of age groups as well as on the basis of total school enrollment.

The review of the literature on toilet facilities reveals a wide range of opinions, especially on the ratio of fixtures to the enrollment. Several city school systems and one state department of education have attempted objective counts on the use of the facilities, to determine what the ratio should be. In all these attempts, in which the method used has been described in the report, the count has been made in the period set aside by the school administration to furnish an opportunity for children to use the facilities. Up to date, no study has been reported that deals with the problem of determining whether the period set by the school (the toilet recess) coincides with the normal rhythms of children, or whether the routine toilet recess functions as an aid in establishing desirable rhythms of elimination. A survey of schedules in which the staggered recess is the rule, raises the question: Were the elimination needs or elimination rhythms of children considered in determining the time at which the toilet period should come? In the light of the consideration suggested, the objective count of use of the toilet facilities during the set periods may or may not represent the real need for their use.

The type of study undertaken in the nursery school (diary records of children), while cumbersome for use with larger groups, and time consuming, have yielded valuable information on needs of young children and might, if continued throughout the early grades in the elementary school, furnish some light on what the elimination needs and rhythms are for children of those age levels; and the significance of these to the health of the child and to his education in the matter of assuming responsibility for meeting them. Certainly experimental studies of toilet ratios which take into account various factors involved in the use of toilets—as size of the school, age level of children, elimination needs of children of different age levels (established on bases other than objective counts of the use of school toilets at

times set by the school), variations in elimination rhythms of children—should be productive of valuable information on which to base ratios of fixtures to enrollment. Until a scientific investigation of these problems has established the soundness of low ratios between toilet fixtures and enrollment, the interests of child health might be profitably served by maintaining a reasonable or even a liberal ratio.

Standard No. 75: "Elementary schools should be equipped with showers adjacent to the playroom or gymnasium." Only 45 members of the group rated this standard; 33 of them gave it a place at least as good as *Highly Desirable;* and 1 rated it as low as *Questionable.* The two comments differed materially; one expressed the opinion that "the provision should depend upon the type of community;" the other, that "showers should be required in all schools."

This standard appeared in the literature on school hygiene in 1890,[63] and as a school health standard in 1892.[64] Both recommendations were based upon the reports of the successful use of shower baths in the schools of Germany.

Shower baths in elementary schools have received scant attention in the literature on school health, as compared with the attention directed toward their use in the high schools. In the discussions, showers seem to be considered mainly as accessory to the athletic field, the swimming pool or the gymnasium. Little attention has been given to the use of showers educationally in the elementary schools, in fostering habits of cleanliness.

One text on the elementary school plant[65] gives two purposes for showers in the elementary school—for use after the exercise period, and for neighborhood bathing, with the provision of the public bathing facilities depending upon the character of

[63] Gerhard, W. P., "A Plea for Rain Baths in Public Schools," *American Architect,* July 14-21, 1890.

[64] Burnham, W. H., "Outlines of School Hygiene," *Pedagogical Seminary,* Vol. 11, 1892, p. 37.

[65] Spain, C. L., Moehlman, A. B., and Frostic, F. A., *Public Elementary School Plant,* New York, Rand McNally and Co., 1930, p. 344-45.

the neighborhood. The authors state further, that while the post-exercise bath is most desirable from the standpoint of hygiene and health, the administrative difficulties involved in establishing the practice in the elementary school would require changes in the internal organization of the school.

Strayer and Engelhardt[66] recommend showers for the elementary school, and suggest that they be located near the playroom, the number of showers and the size of the space allotted to them to depend upon the bathing program developed in the school.

The question of shower baths in the elementary schools suggests other questions that call for an answer before the problem of whether showers shall be provided in the elementary school can be settled: Has the shower bath in the elementary school an educational function in communities where the homes furnish adequate bathing facilities? In elementary schools where swimming facilities (pools) are provided, it is desirable that provision be made to give children ample opportunity to acquire not only habits of personal cleanliness, but also to develop a sense of responsibility for the sanitation of community facilities? Does the internal organization of the elementary school permit changes that will favor the full educational use of shower baths?

While the value of shower baths in the elementary schools has been established in specific localities, the general installation of showers in elementary schools and their subsequent use educationally will likely await the results of further study. Such studies which might be profitably pursued with a view to determining the status of the need educationally for shower baths in the elementary schools might include:

A study of nationality groups in the school population, the recency of the arrival in the community; evidence of familiarity with the use of modern bathing facilities and established practices in bathing.

A study of the housing situation in the locality of the school with relation to modern facilities for bathing, and the actual opportunities

[66] Strayer, G. D. and Engelhardt, N. L., "Score Card and Standards for Elementary Schools," 1933, p. 64, *MS.*

available in the homes for children to acquire the mastery and the skill of using the shower bath effectively and with satisfaction to himself.

A study of student practice in relation to use of showers on junior high school and high school levels, to determine the educational value of the requirement of post-exercise and pre-swimming baths in establishing more or less regular bathing practices on those levels in a relatively short time.

A comparative study of bathing practices of high school students for whom the introduction to school shower baths came in connection with swimming and exercise in high school, and those student groups in which shower baths constituted an educational feature in the elementary school life. It would appear that such a study might profitably be made not only in the less privileged neighborhoods but in favored communities as well.

5. Cleaning

Standard No. 77: "Whenever possible, the floors should be waxed to reduce dust and to eliminate the need for scrubbing. Classrooms should be scrubbed and waxed twice a year. Untreated floors should be scrubbed monthly."—One member of the group of 52 failed to rate this standard; 34 gave it a place as high as *Highly Desirable;* and 11 rated it as low as *Questionable.* It was one of 4 standards to be rated as low as *Questionable* by not less than 11 members of the group. The objections centered about the provision that the floors be waxed.

Specific recommendations were made regarding the cleanliness and care of school rooms floors in the literature on school health standards in 1892.[67] Clark[68] in her survey of legislation in the following year found that 4 states and 9 cities had enacted laws providing for some degree of cleanliness of the school room floor. The Reports of the Commissioner of Education, beginning as far back as the early 70's contain frequent

[67] Burnham, W. H., "Outlines of School Hygiene," *Pedagogical Seminary,* Vol. 11, p. 37.

[68] Clark, Hannah, "Sanitary Legislation Related to the Schools," *Report of U. S. Commissioner of Education,* 1893-94.

and regular attacks on the failure of school officials to provide adequate care for keeping the floors clean. Dr. David Lincoln's[69] survey of some schools in New York State is one of the masterpieces on the subject.

Following Clark's study just cited, the Commissioner of Education recommended a number of school health standards, among them, one providing for sweeping the floors with damp sawdust and dusting the rooms with a damp cloth, daily, and for the thorough cleaning of floors, furniture and windows once a month.[70] In this connection, it is interesting to note the tendency toward legislative requirement regarding the care of floors. In 1915, when Cook studied the laws and regulations related to the sanitation of schools, 9 states had legislated on the treatment of floors, the frequency of scrubbing, and the methods employed.[71]

Two recent studies now recognized as standard in the matter of janitor service and the sanitary care of the school, include one by Reeves[72] in 1925 and another and more extensive study by Reeves and Ganders[73] in 1928. Both studies are widely quoted by writers on management and care of the school plant, either from the standpoint of administrative management or from that of school hygiene. The recommendations of the former study are incorporated in the latter, hence only the recommendations from the latter will be quoted here. The authors advise the treatment of floors with either oil or wax, as both act to reduce dust. No preference was given to one or the other, but the advantages of each were stated.[74] They report also a study of the practice of scrubbing floors in 28 schools.

[69] Report of the Board of Health of New York State, 1882, reproduced in part in report of the Commissioner of Education.

[70] Report of U. S. Commissioner of Education, 1893-94, p. 1349.

[71] Cook, W. A., "Schoolhouse Sanitation," *Office of Education,* Bulletin No. 21, 1915, p. 19.

[72] Reeves, C. E., "Analysis of Janitorial Service," Teachers College Contribution to Education, 1925.

[73] Reeves and Ganders, *op. cit.,* 1928.

[74] *Ibid.,* p. 140.

The median practice was twice a year. In the 67 sets of rules and regulations which they consulted, the median scrubbing requirement was 3 times a year.[75] In the opinion of these authors the frequency of scrubbing should be reduced to the minimum consistent with sanitation. For that reason they recommend the treatment of floors with a high grade of light oil or wax, since such floors can be cleaned and retreated without scrubbing.[76]

The most frequent scrubbing of untreated floors found in their study was once a month. The authors question the adequacy of monthly scrubbing unless the floors are mopped weekly at the times when they are not scrubbed.[77] However, they deplore the failure to treat floors with some preservative such as oil or wax. They consider such treatment to be preferred to frequent scrubbing, which ruins the floor.

As far back as 1917, Dresslar[78] expressed himself as favoring the treatment of clean floors with either oil or wax to avoid the need of frequent scrubbing; in 1918, practically the same opinion was voiced in "Healthful Schools."[79] The objections to frequent scrubbing, when stated, dealt with the damage sustained by the wooden floors when subjected to frequent scrubbing.

From the foregoing rather limited survey of the literature dealing with the care of floors, it would seem desirable that classroom floors be treated with a light good oil, or with wax, for the purpose of reducing the dust and also for the sake of preserving the floors. An accepted authority on building care and management has expressed the opinion that untreated floors should be scrubbed not less than once a month and that such care should be accompanied by weekly mopping. No mention

[75] *Ibid.*, pp. 120-21.

[76] *Ibid.*

[77] *Ibid.*, p. 121.

[78] Dresslar, Fletcher, *School Hygiene,* New York, The Macmillan Co., 1917, p. 346.

[79] Ayers, Williams, and Wood, *op. cit.*, pp. 192-93.

was made by hygienist or specialists in building management of the possible safety hazard in waxed floors.

6. Ventilation[80]

Two of the standards dealing with the ventilation of classrooms failed to secure acceptance among the group participating in the present study. A statement of both standards follows, together with a brief report of the treatment each received at the hands of the raters:

Standard No. 57: "Fifteen square feet of floor space, and 200 cubic feet of air space should be allowed as a minimum for each child."

This item received a median rating of 4.5. Of the 46 ratings given, 38 placed it as good or better than *Highly Desirable,* and only 2 placed it at least as low as *Questionable.* Neither of the protesting raters offered a comment.

Standard No. 86: "The ventilating system should supply every occupied room during the entire time of occupancy, with a minimum supply of 10 cubic feet per pupil per minute, of pure outdoor air." (Legal requirement in some states is 30 cubic feet per minute.)—This item received a median rating of *4.,* although there was but one protest against it. Out of the 49 ratings received, however, only 35 were at least as high as *Highly Desirable.* There were but three comments. One by the protesting rater advised the "elimination of the item, entirely," another questioned the accuracy of the use of such a term as "pure outdoor air," while the third related to one of the recent published reports on the "ill effects of 30 cubic feet per minute per pupil."

A survey of the recent literature on ventilation reveals a change in the understanding of what constitutes a health problem in classroom ventilation. The "carbon dioxide theory" has been discarded, and today, students of ventilation are consider-

[80] Unity in discussion of ventilation required that the chronological order of standards be abandoned here.

ing the effects of room temperature upon the ability to work, and upon the frequency of colds and other respiratory diseases.

While the serious consideration of the "carbon dioxide theory" as a health factor in school-room ventilation has disappeared from the literature on the subject, the influence it exerted is still to be seen in the fact that 20 states have now on their statute books, laws requiring that the minimum supply of air in the school room should be not less than 30 cubic feet per minute per child.[81] McLure's study indicates that in states which require 30 cubic feet of air per pupil per minute, there is a tendency to install ventilating systems of the mechanical type, while in states that do not make that requirement, the ventilaing system found in the new school buildings is of the non-mechanical type.[82] A recent review of the literature on the physiological effects of temperature draws the conclusion that the studies made in the Harvard School of Public Health and those made in the Laboratory of the American Society of Ventilating Engineers in Pittsburgh have confirmed the fact that the ventilation problem is virtually a thermal one, and have also emphasized the dangers of overheating.[83]

The report of the Sub-Committee on the School Plant, White House Conference, III-C, Committee on the School Child (unpublished), contains an excellent review of the researches dealing with the problem of ventilation of schools. The final contribution of the New York Commission on Ventilation contains a briefer review, but an excellent one. The conclusions reached in both reviews are virtually the same: The major objective

[81] "School Ventilation, Principles and Practices," Final contribution of the New York Commission on Ventilation, Bureau of Publications, Teachers College, Columbia University, 1931, pp. 7-9.

[82] McLure, John R., "The Ventilation of School Buildings," *Contribution to Education* No. 157, Teachers College, Columbia University, 1924, pp. 39-40.

[83] Sayers, R. R. and Davenport, S. J., "Review of literature on the physiological effects of adnormal temperatures and humidities," *Public Health Reports,* 1927, XIII, 933.

of school ventilation is to avoid overheating on one hand, and objectionable drafts on the other. The report of the New York Commission goes on to say: ". . . it has been shown beyond question that both these objectives can be attained with an air change far less than thirty cubic feet per minute."[84] Regarding the legal requirements of 30 cubic feet per minute per pupil, the report of the New York Commission says: "Both careful experimental studies and practical experience have demonstrated that an air supply of 10 to 15 cubic feet per minute per pupil is adequate and satisfactory, and that the window-gravity system will meet this demand."[85] The report proposes a substitute provision which includes a specification of "15 square feet of floor space and 200 cubic feet of air space per pupil in classrooms (including coat rooms), and a means of air supply capable of avoiding unpleasant odors, and of avoiding the increase of room temperature above 68 degrees without producing chilling drafts.[86] The report concludes finally with:

"The present laws and regulations requiring 30 cubic feet of air per minute per pupil in the schoolroom have no justification in theory; and in practice may involve serious handicap in the art of school ventilation. Such regulations should be replaced by law outlining the major objectives of school ventilation and delegating to some small expert official body the power to determine whether specific plans for school ventilation are adequate to attain these objectives."[87]

The studies of the New York Ventilation Commission on which they based their recommendation of 15 square feet of floor space per pupil as a minimum, were paralleled by one in England involving the observation of 1,537 children, in which it was discovered that the absenteeism of children due to sick-

[84] "School Ventilation, Principles and Practices," Final contribution of the New York Commission on Ventilation, Bureau of Publications, Teachers College, Columbia University, 1931, p. 47.

[85] *Ibid.*, p. 55.

[86] *Ibid.*, pp. 62-63.

[87] *Ibid.*, pp. 66-67.

ness was 7.5 per cent when the floor space was 16.6 square feet per pupil against 10.1 per cent absenteeism when the floor space was 12.6 square feet.[88]

From a survey of the recent literature on school ventilation, especially that dealing with experimental study of the problem, it appears that the objectives of school ventilation can be met adequately (in the classroom) through an air supply of 10-15 cubic feet per minute per pupil, and that a floor space approximating 15 square feet per pupil (in classrooms) seems to favor a reduction of absenteeism of children due to sickness.

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CHAPTER VII

STANDARDS RELATED TO CLASSIFICATION OF CHILDREN AND SPECIAL EDUCATION

Homogeneous Grouping

Standard No. 94 deals with the classification of children. It reads as follows:

"The progress, efficiency, and emotional health of children should be safeguarded by homogeneous grouping."

The explanation of homogeneous grouping that probably represents the common understanding of the term in educational circles is offered by Rankin:

"The term, ability grouping . . . means that organization of schools in which children are classified for purposes of learning and teaching into groups that are relatively homogeneous with respect to one or more significant characteristics. Ordinarily, it includes not only the reclassification of the pupils gathered in a given grade, into groups of greater homogeneity, but also an adjustment in content and method to the differences among the groups thus formed. The term as commonly used refers to grouping only within the range of normal intelligence, or approximately between the intelligence quotients of 70 and 130."[1]

Item No. 94 received a median rating of *4*. Of the fifty-two raters, fifty ventured a decision on it. Twenty-six considered it at least as good as *Highly Desirable*. It was, however, one of the three items given a place as low in the scale as *Questionable* by twelve or more members of the group. Six of the members of the group offered comments in addition to their rating. All of the comments reflected scepticism with regard to the wholesale claims for any administrative device, such as

[1] Rankin, P. T., "Pupil Classification and Grouping," *Review of Educational Research* I (3) pp. 200-30, June, 1931.

that implied in item No. 94. One comment cited two recent researches in which the conclusions did not favor homogeneous grouping.

The disposition of item No. 94 by the raters and the relatively large protest against it suggest some questions which might with profit receive consideration at this time:

1. Is the rejection of homogeneous grouping as found in the present study in keeping with the present practices and trends in the field?
2. Might the protest registered against homogenous grouping in the present study be considered a reflection of a controversy in the larger field of education?
3. What issues in the controversy are claiming attention at the present time?
4. What health problems are involved in homogeneous grouping?
5. What light do the findings of research throw upon those problems?
6. What lines of research might throw additional light on the problem?

The literature which throws some light on the present practices and trends in homogeneous grouping includes an Office of Education bulletin, a questionnaire study made for the Department of Superintendence, a doctor's dissertation from a mid-western university, and two doctor's dissertations in progress in an eastern university. The first indicates a wide distribution of the practice. Of the cities under 100,000 in population, 252 reported, with 210 using homogeneous grouping in the elementary schools, 176 in junior high school, and 117 in senior high school. Among cities of 100,000 population and over, 40 reported. Of these, 36 used homogeneous grouping in elementary school, 28 in junior high school, and 26 in senior high school.[2]

Some of the cities reported the use of two or more bases of grouping. The intelligence quotient was used as a basis in 106

[2] "Cities Reporting the Use of Homogeneous Grouping and the Winetka and Dalton Plans," *City School Leaflet* No. 22, Office of Education, 1926.

cities, mental age in 41, educational age in 45, and teachers' judgments in 113.

The report presented to the Department of Superintendence, National Education Association, in 1931, was based on the results of a questionnaire addressed to school superintendents. In the 500 replies, the advantages of homogeneous grouping were listed more frequently than the disadvantages. There was, however, practically an agreement among the superintendents that the value of homogeneous grouping depended upon the differentiation of content and methods of teaching for the different groups as well as an allowance for a wide range of abilities and interests within any group.[3]

Otto[4] based conclusions for the class of cities studied in the country as a whole upon the 21 per cent response to a questionnaire sent to superintendents of schools in cities varying from 2,500 to 25,000 in population (1920 census) in 31 states well distributed. He presents data to show that 74 per cent of the districts studied divide the pupils in any one grade into two or more distinct sections, the practices in the various districts differing chiefly as to the basis for forming the groups.

Sauvain[5] finds that the evidence which he has collected through personal correspondence with superintendents of schools indicates that a good share of the cities reporting the use of homogeneous grouping to the Office of Education, in 1926, now seem to be moving away from it. To obtain a complete picture of the trend, there would obviously be needed a complementary study to reveal how many schools, not using homogeneous grouping in 1926, are now employing it. Such data are not available.

[3] *Ninth Yearbook of the Department of Superintendence,* National Education Association, 1931, pp. 121-126.

[4] Otto, H. J., "Current Practices in the Organization of the Elementary Schools," *Northwestern Contribution to Education* No. 5, Evanston, Illinois, Northwestern University, 1932, pp. 32-43.

[5] Sauvain, Walter H., "A Study of Opinion Regarding Homogeneous Grouping," Teachers College, Columbia University. (Dissertation under way.)

From the data presented in the studies quoted, the following conclusions appear to be reasonable:

Homogeneous grouping has been used and is now being used in many school systems of the country.

Even within any one school system there appears to be no consistent use of any single basis or any two bases for selecting members of the group.

Among school superintendents there appears to be a recognition of factors outside of grouping itself that condition the value of the practice.

In some of the cities reporting the use of homogeneous grouping in 1926, there appears to be a tendency to discontinue the practice of grouping.

Without further information, it is not possible at this time to determine whether Sauvain's data indicate a passing phase, merely a tendency to change one way or another, or a real trend in the use of homogeneous grouping. Neither is there evidence that another group of school health specialists, or even the same group at another time, would dispose of the question of homogeneous grouping as it was disposed of by the rating group in the present study. It is apparent, however, that there is some agreement between the way in which the school health specialists disposed of the question in theory, and the way in which many school superintendents in the country are handling the question of homogeneous grouping in practice.

In the professional periodical literature of the past two or three years, homogeneous grouping has received its full share of attention. The *Educational Index,* 1929-1931, lists 91 titles on that subject alone, while between February, 1931 and February, 1933, there are 64 titles listed. The *Review of Educational Research,* in the number that deals with School Organization, carries a bibliography of 140 titles on pupil classification. The lines are drawn closely between those who favor homogeneous grouping and those who oppose it. This is especially true with respect to its use in the elementary school. McGaughy,[6] Sy-

[6] McGaughy, J. R., "Homogeneous Grouping," *Childhood Education.* VI, 1930, pp. 291-296.

monds,[7] and Rankin[8] sum up and present the arguments for and against the practice.

In view of the sharp division of opinion on homogeneous grouping among educational leaders and school administrators, a protest against the practice from approximately one-fourth of the school health specialists does not seem unreasonable. Inasmuch as "health factors" are cited in the arguments, both pro and con, in the controversy in general education, one might be led to expect that among school health specialists the question would still be among the "unsolved." In the field of general education, supporters of homogeneous grouping offer, as one of the strong arguments favoring the scheme, that by equalizing opportunity for the success of children, homogeneous grouping is an important factor in the mental health of those children. On the other hand, the opponents of the scheme claim that homogeneous grouping of children on the basis of IQ and achievement tests is a violation of the personality of the child, and, among children of the lower group, tends to develop a feeling of inferiority. In the light of these points of view and of the division of opinion among the school health specialists, it seems advisable to pursue the consideration of homogeneous grouping for the purpose of discovering whether research offers evidence on the basis of which school health workers might find a way to reach agreement on the question.

In the division of opinion among educators in general, many of the arguments appear to center on questions of the validity of the basic assumptions of homogeneous grouping offered by supporters of grouping. The assumptions as stated by Rankin[9] are given here in summarized form:

1. Children differ very much among themselves, even among those of the same age and sex.

[7] Symonds, P. M., "Homogeneous Grouping," *Teachers College Record,* XXXII (6) pp. 501-17.

[8] Rankin, P. T., "Pupil Classification and Grouping," *Review of Educational Research,* I (3) pp. 200-230, June, 1931.

[9] Rankin, P. T., "Pupil Classification and Grouping," *Review of Educational Research,* I (3) pp. 200-230, June, 1931.

2. Although the differences among individuals are large, the individuals may be classified into groups within which the individual differences are relatively insignificant and the differences between the groups are relatively great.

3. The changes in the children at which the school aims occur in a greater degree, and with greater certainty, or with greater ease of instruction, when children work in homogeneous groups than when they work in heterogeneous groups.

In relation to the second assumption, the supporters of homogeneous grouping contend that such a grouping on a multiple basis, which includes IQ and past achievement in specific subjects, so reduces the differences between members of a given group as to equalize opportunity for success, and to reduce the total number of failures within the group. The opponents of the plan insist that these claims made for homogeneous grouping are unfounded, since the character of abilities is so highly specialized that, to sustain the claims made for homogeneous grouping, a reclassification would be necessary for each tool subject. In the elementary school at least, the settlement of the claims in question must await more conclusive evidence resulting from experimental research.

In the literature much of the discussion is concerned with the specialized character of abilities and with administrative procedures best suited to a more nearly equalized recognition of the abilities.

The third assumption, however, suggests questions that challenge the attention of administrators in elementary education. While "changes in children at which the school aims" constitutes a rather inclusive category that allows of interpretations as broad as the philosophy of education itself, it raises a few questions that have a more or less direct bearing upon the problem under discussion and upon the health of children:

1. What are these "changes aimed at by the school?"

2. Are the aims of the school to be limited to those "changes" that are involved in the mastery of the tools of learning?

3. Is the school to accept as its aims only those "changes" that allow of quantitative and objective measurement?

4. Is the school concerned with the "changes" in the child that may accompany the use of a mastered tool, or that may come as the result of its use?

5. Is the school justified in believing that the changes involved in an all-around development of the child will proceed, step by step, with the different stages of the mastery of tools of learning in situations planned primarily or solely in the interest of the mastery of tools?

6. Does advance through the elementary school, as measured by objective tests of the mastery of learning tools, represent the optimum at any given time of other desirable "changes" in the child?

Most of the opponents of homogeneous grouping ask one or all of these questions more or less directly. McGaughy,[10] Keliher,[11] Brook[12]—all discuss the questions. McGaughy emphasizes the sense of inferiority developed in the child in the "stigmatized" group; Brook claims that homogeneous grouping disregards the personality of the child; and Keliher scrutinizes the problem from many angles, pointing out the need to consider the child as a whole.

Turney[13] also touches on these questions, when, in his plea for the application of the mental hygiene criterion to the organization of children for purposes of teaching and learning, he says: "There is no reason why such things as reduced inferiority, better school attitudes, and better social attitudes in general should not be considered as important as pure achievement in subject-matter, and should therefore be considered in weighing the pros and cons of homogeneous grouping." Sy-

[10] McGaughy, J. R., "Homogeneous Grouping," *Childhood Education,* VI, 1930, pp. 291-296, March, 1930.

[11] Keliher, Alice, "A Critical Study of Homogeneous Grouping in the Elementary School," *Contribution to Education* No. 452, Teachers College, Columbia University, 1930.

[12] Brook, W. G., "The Attendant Evils of Homogeneous Grouping," *School Executives' Magazine,* 49, pp. 505-508, July, 1930.

[13] Turney, A. H., "The Status of Ability Grouping," *Educational Administration and Supervision,* XVII, pp. 21-42 and pp. 110-127, January and February, 1931.

monds[14] considers the possibilities of success (in the mastery of knowledges and skills) for the individual, in homogeneous grouping as compared with the possibilities in heterogeneous grouping. He finds that the weight of evidence favors homogeneous grouping.

The interest of school health workers in the question of homogeneous grouping arises from the conviction that the classification and organization of children for teaching and learning purposes should be by methods which favor the increase in the child of resistance to fatigue;[15] which favor an increased frequency and range of worthwhile successes for the child;[16] and which favor the opportunity for a wide range of worthwhile tasks that challenge his interest and effort.[17] According to Burnham, the physical and mental health of the child demand that these criteria represent a minimum requirement in the selection of schemes of classification and administration.

Symonds believes that the child's capacity to profit from the activities of the group is definitely limited by his status in skills and abilities;[18] that homogeneous grouping on the basis of skills and abilities is adapted to favor success for a larger number; and that "success is the prime requisite for satisfactory school adjustment."[19]

Billett[20] concludes that a proper attention to the homogeneous

[14] Symonds, P. M., "Homogeneous Grouping," *Teachers College Record,* XXXII (6) pp. 501-517, 1931.

[15] Burnham, W. H., "Mental Hygiene in the School," (Reprint) *Mental Hygiene,* XVI (1) pp. 26-36, 1932.

[16] Burnham, W. H., *The Normal Mind,* New York, D. Appleton and Co., 1927, pp. 451-485.

[17] *Ibid.,* pp. 207-226.

[18] Symonds, P. M., *op. cit.*

[19] Symonds, P. M. and Jackson, C. E., "An Adjustment Survey," *Journal of Educational Research,* XXI, pp. 321-330, 1930.

[20] Billett, R. O., "A Controlled Experiment to Determine the Advantage of Homogeneous Grouping," *Educational Research Bulletin,* Ohio State University, VII (7, 8, 9), April 4-May 2, 1928.

grouping of slow pupils in high schools would reduce the failing rate practically to zero. Senour's[21] study included a comparison of the number of failures in sectioned and unsectioned classes. The number of failures in the unsectioned far outnumbered those in the sectioned classes. Torgeson[22] studied failures occurring before and after classification. He found that a marked reduction of number of failures followed classification, even though the level of achievement was advanced. In his review of research on this aspect of homogeneous grouping, Turney[23] concludes that the evidence favors the claim that homogeneous grouping reduces failures. Rankin[24] concludes that in so far as the effect of homogeneous grouping on characteristics of pupils, other than knowledge and skills are concerned, the evidence is highly subjective and inconclusive.

The Report of the Sub-Committee on Mental Hygiene[25] of the White House Conference, III-C, The School Child, considers pupil placement as it affects child health. According to this report, one hygienic aspect of pupil placement is to be found in the arrangement of the demands of the school in proportion to the ability of the child. While the report states that experimental evidence showing that pupil placement has important bearings on child health is largely lacking, the Committee accepts the following premise:

"When pupils are properly placed in school, the materials and methods of instruction can be better suited to their needs, the school demands can be arranged more in accord with pupil ability; there will be less occasion for the stress and strain of worry; certain needless thwartings can be more readily avoided; and every child can

[21] Senour, A. C., "Some Influences of Multiple Track Organization," *Bulletin of the School of Education,* University of Indiana, III, 1927.

[22] Torgeson, T. L., "Is Classification by Mental Tests and I.Q. Worthwhile?" *Journal of Educational Research,* XIII, pp. 171-180, March, 1926.

[23] Turney, A. H., *op. cit.*, XVII, pp. 21-42 and 110-127, 1931.

[24] Rankin, P. T., "Pupil Classification and Grouping," *Review of Educational Research,* I (3) p. 229, June, 1931.

[25] This report is still unpublished. An official copy is on file in the office of Dr. Thomas D. Wood, Teachers College, Columbia University.

have the joy and satisfaction that comes from work which really leads to accomplishment."

A survey of pertinent research leads this committee to the conclusion that the results of experiments are inconclusive because of certain defects in the set-up of the studies, such as: failure to differentiate methods and curricula after grouping, the use of a single intelligence test as a basis of classification, a limited period of experimentation, and criteria too narrow to judge the value of homogeneous grouping.

Burnham sees hygienic values and dangers in both homogeneous and heterogeneous grouping. He offers the suggestion that, for the mastery of certain skills connected with the tools of learning, homogeneous grouping apparently safeguards the child's right to successful achievement and thus promotes good work habits important to an increased resistance to fatigue, and to mental hygiene; but that there are other needs of the child that are met adequately in heterogeneous groups, and that these needs are as important from the standpoint of hygiene as the mastery of skills. In the interests of the health of the child, he feels that flexibility in grouping is desirable.[26]

The survey of experimental evidence and its interpretations by educators and hygienists indicates that the values of homogeneous grouping have not been definitely established, especially in the elementary school. Nevertheless, the weight of evidence seems to favor homogeneous grouping as an important factor in the school progress of children, when the progress and learning are measured in terms of mastery of skills and knowledge needed in the use of tools of learning. There appears, however, to be a strong feeling that there are other needs of the child, the adequate meeting of which is essential to his healthful development, and that those needs are not met in homogeneous grouping. At this time, no solution of the controversy is in sight.

[26] Burnham, W. H., *The Normal Mind,* D. Appleton and Co., 1927, pp. 261-62.

The interests of child health, mental and physical, might be more effectively served if efforts were turned toward a search for a better understanding of just what the developmental needs of children are; and then toward an experimental study for the discovery of classification, materials, and methods best suited to meet the needs. It appears that, in a large group of educators and hygienists, the belief is growing that in the light of our present knowledge, the interests of child health are best served by maintaining a policy of flexibility in the matter of classification and grouping of children in the elementary school.

Education of the Gifted

A standard more or less closely related to that considered in the preceding pages makes special provision for the education of the gifted child. Like the preceding standard, it failed to secure a median rating of *5-Essential.* A consideration of the treatment by the raters, and a review of the literature bearing on the problem follows:

Standard No. 95: "Special groups should be provided for the gifted, the upper 2-4 per cent on the educational and intellectual scale."

Fifty-one of the 52 raters gave this standard a place, with 52.9 per cent of the number rating it at least as *Highly Desirable,* and 17.6 per cent placing it as low as *Questionable.* The 9 comments of the raters indicated a belief that "enrichment" and "special provision" would constitute more acceptable arrangements for the education of the group in question. While not definitely so stated in the comments, the inference was that the recommendations referred to methods to be directed toward the education of the individual gifted child without segregation.

A recent study[27] defines the gifted child as "the child with superior intelligence" and, including among the superior the upper 6 per cent on the intellectual scale, estimates the number of gifted children in the public and private schools of the coun-

[27] White House Conference, *Special Education,* New York, Century Co., 1931, p. 538.

try as 1,500,000.[28] Regarding the distribution of such children, the study reports:

"These children are fairly evenly distributed as to sex, and are found in all the different races and nationalities in our mixed population. They seem to be fairly evenly distributed between cities and towns and in rural districts."[29]

Hollingworth[30] designates as "gifted," those children testing in the current generation at or above an intelligence quotient of 130 on a scale like the Stanford-Binet. The school children which Hollingworth includes in the upper 1% in intelligence would by rough estimate be about 250,000. On the basis of the 2-4% selected in Standard No. 95, special groups should be provided for from 500,000 to 1,000,000 children from the upper levels of the educational and intellectual scale.

Heck[31] found that in 1927-28, there were 400,000 children selected from the upper 6% in intelligence in 150 special classes in 40 cities, scattered through 23 states. According to the estimates of the White House Conference Committee on the Gifted Child,[32] Heck's report probably covers all the provision for special education of the gifted child in cities above 10,000 in population with the exception of those cities where the X, Y, Z classes are organized (X, Y, Z classes all in one room, with the X class reserved for the gifted children).

In general, two methods appear to have been followed in the education of gifted children in special classes, rapid advance and enrichment. In the rapid advance classes, the children complete the required work of a grade at a rapid rate and tend to enter high school or college at an early age. The enrichment

[28] *Ibid.*, p. 537.

[29] *Ibid.*

[30] Hollingworth, L. S., "The Child of Very Superior Intelligence as a Special Problem in Social Adjustment." *Mental Hygiene,* Vol. LXV (1), January, 1931, pp. 3-16.

[31] Heck, Arch. O., "Special Schools and Classes in Cities of 10,000 and over in the United States, 1927-28," *Office of Education Bulletin,* 1930, No. 7, Washington, Government Printing Office, 1931.

[32] White House Conference, *Special Education,* New York, Century Co., 1931, p. 542.

method, on the other hand, provides for the completion of the required work, plus one other subject. The rest of the time belongs to the child, who in consultation with the teacher, spends it as he sees best. Obviously such a method pursued in the regular classroom, as suggested in the comments of some of the raters in the present study, would encounter difficulties that would test the ingenuity of the teacher.

While the discovery and segregation of children of superior intelligence for purposes of teaching and learning have received considerable attention in the educational literature for the past ten or fifteen years, it remained for Burnham[33] to point out the mental hygiene aspects of the education of those children, and the outcomes in work habits, mental regimen, or lack of it. In a recent address Hollingworth reports that the mental hygiene problem of the gifted child is one of the age period corresponding to that of the elementary school[34] and includes such problems as: work, in relation to which the superior child in the regular classroom tends to acquire habits of idleness and day-dreaming; adjustment to his classmates in groups where the superior child tends to be the youngest and is forced to use his wit to face the teasing of his classmates or to cope with the superior muscular power of the older members; play, in which the difficulty lies in finding playmates congenial both in size and mental interests; conformity, in relation to which the child must inhibit the desire to express his ideas while he listens to others, must learn to speak according to a regular procedure, and to restrain disappointment when not given a chance to be heard. Hollingworth[35] points out the desirability of the special class with an enriched program for such children, and offers a basis for the selection of content and materials to be used in the program.

[33] Burnham, W. H., *The Normal Mind,* New York, D. Appleton Co., 1927, p. 265.

[34] Hollingworth, L. S., *op. cit.*

[35] Hollingworth, L. S., *Gifted Children, Their Nature and Their Nurture,* New York, Macmillan Co., 1926. Chapters 10 and 11.

Terman,[36] following a very thoroughgoing study of gifted children that extended through a number of years, offers the following opinion regarding their education:

"No valid objection has ever been made against special classes for gifted children, and it is safe to predict that they will multiply in number until in all educationally progressive cities, provision will be made for at least one or two per cent of the school population."

The objections to the special class for the gifted child, as stated in the review of the problem in the report of the Committee of the Gifted Child of the White House Conference,[37] may be briefly summarized as: (1) The practice is undemocratic; (2) the child is placed in an artificial situation when his daily contacts are restricted to those playmates representing a narrow range of intelligence; and (3) there is a danger of the gifted child's becoming conceited. The report cited does not identify the objections as stated, with any specific individual making such objections, but attempts to meet the objections one by one. At this point it might be helpful to note that the arguments for and against special grouping of the gifted child follow the same general lines as those on the question of homogeneous grouping. The following differences should be kept in mind, however: The work and play adjustments and other mental hygiene problems of the gifted child are thrown into stronger relief because of the usual difference in age between the gifted and his classmates in the regular class. The adjustment problem of the gifted in school is most pressing in the prepuberty years, while the strong adherents of homogeneous groupings are rather more concerned with the adjustments during the adolescent period. The group considered among the gifted constitute those in the top 1 to 6% of the school population, while the principle proper of homogeneous grouping applies to that large group of school children ranging in I.Q. from 70 to 120.

[36] Terman, L. M., "The Gifted Child." *Murchison's Handbook of Psychology,* 1931, p. 583.

[37] White House Conference, III-C, "Special Education," p. 539-540.

Among the scientific studies which have attempted to test the results of segregating the gifted in their achievement in school subjects, their development of such traits as that of desire for attention, are those by Woods, and the one by Danielson, both of which are reported in Special Education.[38] Woods, through the use of a rating plan, found that the gifted child made a good showing on the traits studied; and Danielson, in a comparative study of school marks of superior children in two groups, one that had been given experience in a special group, and the other that had not, found that results favored the child who had the special group experience.

A recent report of a comparative study of achievement of gifted children is that of Gray and Hollingworth,[39] who followed the progress of two groups each consisting of 34 children, testing on Stanford-Binet, with an I.Q. of 130 or above. Group No. 1 was in a special class, and group No. 2 in a regular classroom with a prescribed New York curriculum. The group was selected in 1925, and tested after three years. The results showed that achievement depended upon intelligence, whether the child was segregated for instruction or scattered in heterogeneous groups.

The authors conclude their report with the following statement:

"Advantages hoped for from the homogeneous grouping of gifted children are not so much expectation of greater achievement in tool subjects as enriched experiences with additional intellectual opportunities."

The most thoroughgoing study[40] of the health of the gifted child is Terman's investigation of characteristics of 1000 su-

[38] White House Conference, *Special Education,* New York, Century Co., 1931, pp. 547-548.

[39] Gray, H. A. and Hollingworth, L. S., "Achievement of Gifted Children, Enrolled and Not Enrolled in Special Classes," *Journal of Educational Research,* Vol. 24, pp. 255-261, 1931.

[40] Terman, L. M., *Genetic Studies of Genius,* Vol. 1, Stanford University Press, 1925.

perior children which indicates that children of high intelligence are more stable emotionally than are the unselected "controls" of the same age, and that they are larger, stronger and healthier than the average child of the same age.

From the foregoing review of the literature on the education of the gifted children, it would appear that their health problems are related to the adjustments aspects of the child's development, that these problems are most critical during the period of childhood corresponding to the elementary school age, and that in the opinion of specialists in the study of gifted children, those problems can best be solved through a segregation of the gifted and a program of enriched experiences.

Opinions differ on the percentage of school children to be included among the gifted, ranging from one per cent to six. Hollingworth and Terman, both of whom are recognized as authorities on problems of education of the gifted, offer the most conservative estimate, that of 1-2%.

The experimental studies on the use of special grouping in the education of the gifted do not yield convincing evidence, either in support of the plan or for the opposition to such grouping. From the point of view of mental hygiene, however, and judged in the light of satisfactory experience, the presumptive evidence appears to favor special grouping in the education of the upper 1-2% of the elementary school population.

Special Education for the Handicapped

Three standards related to the provision of special classes for handicapped children received a median rating of 4. A statement of the standards and the treatment accorded them by the raters follows:

Standard No. 20: "The school should provide open-air classes for severely run down and undernourished children."

One of the 52 members of the group failed to rate this item. Twenty-eight gave it a place as good or better than *Highly Desirable,* and 10 rated it at least as low as *Questionable.* Two of the raters offered the comment, "such provision should depend

upon local needs and facilities"; one suggested that "all classes should furnish optimum conditions"; and a fourth would amend the standard as follows: "special classes but not especially open-air."

Standard No. 23: "The school should provide special classes for selected and favorable cases of cardiac children to furnish the advantage of an education especially suited to their needs."

Everyone in the group rated this item. Thirty-six gave it a place at least as good as *Highly Desirable,* and 4 placed it as low in the scale as *Questionable.* One comment only was offered: "The need for the organization specified depends upon the number of cases."

Standard No. 24: "The school should provide special classes for children who are crippled to the extent that attendance in regular classes is difficult."

All members of the group rated this item, also; 45 as *Highly Desirable* or better, and with one person rating it as low as *Questionable.* One individual would have given this item a rating of *5* if it were amended to read "attendance is impossible." This standard also received the same comment as the one offered for Standard No. 23, and from the same individual.

Open Air Schools and Classes

Standard No. 20, which provides for open-air classes for severely run down and undernourished children and which did not get a median rating of *5* from the group participating in the study of the present status of acceptance, made its appearance in the literature on school health in the decade beginning 1900.[41] The first open-air school in the country was established in Providence, Rhode Island, in 1908,[42] and like the others to follow it was promoted by an organization for the control of

[41] Report of the United States Commissioner of Education, Vol. I, 1908, p. 95.

[42] *Ibid;* Kingsley, S. C. and Dresslar, F. B., "Open Air Schools," *Office of Education Bulletin,* No. 23, 1916, p. 15.

tuberculosis. "The open-air school came into existence primarily as a special means for the prevention and cure of tuberculosis."[43] Not for long, however, did the open-air school limit its activities to the care and education of children definitely diagnosed as tuberculous, but soon began to extend its services to the undernourished child as well. By 1915, there were in the country not fewer than 40 such schools in 16 cities, with an enrollment of 1263 pupils.[44]

In a study made by Heck,[45] he reports that in 1927-28, 126 cities maintained 1105 open-air schools or classes with an enrollment of 31,186 children. In Rogers's study, published the following year, and dealing only with schools for delicate children, he says that only 30 cities reported open-air schools; 10 reported convertible buildings; and 40, open-window rooms.[45a] Rogers accounts for the discrepancy between the figures in the study just quoted and those in another study by him, published the same year, by saying that the difference was probably due to the failure of the questionnaire for the earlier study to reach all cities having such schools.[46] The later study by Rogers was also made by questionnaire sent from the Office of Education, February, 1930. In it, Rogers reports 126 cities maintaining either open-air schools or open-window classes with a combined enrollment of 46,789 children.[46a]

A report of a special health commission reveals that, in 1931, in the state of New York, 16 cities maintained "specially designed and equipped schoolrooms for 1031 children with latent

[43] Rogers, J. F., "Schools and Classes for Delicate Children," *Office of Education Bulletin,* No. 22, 1930 (published 1931), p. 42.

[44] Kingsley and Dresslar, *op. cit.*, p. 52.

[45] Heck, Arch. O., "Special Schools and Classes in Cities of 10,000 and over in the United States, 1927-28," *Office of Education Bulletin,* No. 7, 1930, pp. 21-22.

[45a] Rogers, J. F., *op. cit.*, pp. 9-10.

[46] Rogers, J. F., "Schools and Classes for Delicate Children," p. 10.

[46a] Rogers, J. F., "School Health Activities, 1930," *Office of Education Pamphlet* No. 21, 1931, pp. 9, 16, 24.

tuberculosis or children otherwise delicate."[47] The "otherwise delicate" children included malnourished children. The commission recommended that the service be continued and extended.

In 1932, Taylor[48] made an investigation of opinions regarding the value of open-air schools. She addressed her inquiry to the educational administrators and supervisors in 213 cities in which open-air schools and open-air classes were in operation. Her conclusions, with some reservations, were: "There is a general admission that open-air schools are justified"; and "there is also a general trend to make the essentials of the open-air classes available for all children."

Rogers comments upon the essentials of the open-air school now made available to all children, such as better ventilation, instruction in food selection, training in good health habits, and opportunity for rest and play in the open air, and points out that the better ventilated school is replacing the special open-air school. He cites Canton, Massachusetts, as an example. In 1916, Kingsley and Dresslar, in their report on Open-Air Schools, picture the new open-air school in Canton. In 1921, in a report of the Massachusetts Public Health Association, in *Commonwealth,* VIII (1), Canton is reported as having "no open-air school but a school building with unusually fine ventilation." In 1930, in reply to the Office of Education questionnaire, Canton reported "no open-air schools."[49]

In the same publication, Rogers gives an historical survey of the development of the open-air school in this country and abroad. He notes the changes in practices in the open-air school in the quarter century in which it has been in operation here: from the general use of extremely low temperature in the open-

[47] "Public Health in New York State," a report of the Health Commission of New York State, Albany, 1932, p. 206.

[48] Taylor, M. W., "Do Open Air Schools Justify Their Extra Cost?" *The Nation's Schools,* Vol. X(6), December, 1932, pp. 27-31.

[49] Rogers, J. F., "Schools and Classes for Delicate Children," pp. 4-5.

air school of the early days toward the tendency to maintain a minimum temperature of 63 degrees and a maximum temperature of 68 degrees;[50] and from the open-air school as an entity in itself to the use of the open-air room in an average school.[51] He traces the influence of the open-air school and the open-window room upon the improvement of the ventilation of schools in general,[52] and upon the introduction of instruction in food selection and habits of living into the regular schoolroom.[53] He goes on to show that the regular classroom with its improved ventilation is replacing the open-air room as such,[54] and that instruction in food values and health habits made available to all children in regular class, produces better results in coping with malnutrition than methods used in the open-air room.[55]

Rogers is convinced, from the evidence which he reviews, "that for the average malnourished children, of whom there is a considerable percentage in all schools, education in right living, with efforts at securing home coöperation, would seem to be all that is necessary."[56] In the Biennial Survey of Education, 1928-30, Rogers states his position even more positively: "Open-air schools for the malnourished are giving way to efforts at educating all pupils as to food and other essentials and to securing the coöperation of the home. Not only do the pupils who are merely poorly nourished do better with the latter method, but, with a better bill of fare at home, the whole household is exposed to more healthful conditions."[57]

The child with juvenile or beginning adult tuberculosis, however, presents another problem. Following a review of the evi-

[50] *Ibid.*, pp. 2, 4.
[51] *Ibid.*, pp. 5, 8.
[52] *Ibid.*, p. 6.
[53] *Ibid.*, pp. 6-7.
[54] *Ibid.*, pp. 9-10.
[55] *Ibid.*, pp. 52-53.
[56] *Ibid.*, p. 53.
[57] Rogers, J. F., *Biennial Survey of Education*, 1928-30, pp. 365-366.

dence on the prevalence of tuberculosis among school children, Rogers concludes that every effort should be made to discover the two per cent of the school population so infected, and to provide them with the best care possible. The open-air school and the open-window room should be devoted to the care and education of such children.[58]

The White House Conference,[59] on the other hand, recommends the organization of special classes in every school system where ten or more children of lowered vitality are found. Among children of lowered vitality, the committee making the recommendations included: the tuberculous, cardiopathic, and circulatory disturbances; malnutrition (either that essentially malnutrition or secondary to infection); epileptics; and encephalitis lethargic.[60]

The White House Conference Committee emphasizes the fact that children of lowered vitality cannot maintain the gains made under special care if they return to the conditions which produced or influenced their disability. The Committee recommends reaching the home for educational purposes.[61]

Summary

A survey of the literature on open-air schools reveals the fact that during the quarter of a century in which the schools have operated in this country, they have not only changed their own practices, but have exerted a powerful influence upon the ventilation of school buildings in general, and upon the curriculum content in the schools. On the other hand, it would appear that the better ventilated classroom is replacing the open-air room as such, and instruction in foods and health habits are being made available to all children. While the facts have not been definitely established, there seems to be a trend toward the reservation of the open-air school for the two-per-cent juvenile

[58] Rogers, J. F., "Schools and Classes for Delicate Children," pp. 52-53.
[59] *Special Education,* White House Conference, 1930, p. 425
[60] *Ibid.,* p. 385.
[61] *Ibid.,* p. 409.

or beginning adult tuberculous children in the school population.

Education of the Crippled Child

Standard No. 24, which provides for special classes for crippled children, failed to secure a median rating of *5* from the group participating in the study. The objections offered were based on the necessity of determining the seriousness of the crippled condition of the children and the number of cases needing special education.

The necessity for giving attention to the education of crippled children was brought to the attention of the public by the Children's Bureau in 1919.[62] The standard stated in various ways has held a place in the literature on school health programs ever since.[63] The epidemic of infantile paralysis in 1916, and the recurrent epidemics, each leaving in its wake numbers of children needing special medical and nursing care over a long period of time, left many states with the definite problem of furnishing an education that would meet the special needs of those children.[64]

According to the study of "crippled children" made for the White House Conference and reported in *Special Education* there is a tendency to give a definition of the term that will "allow for a liberal interpretation, and emphasize the child's inability to attend regular classes with safety and profit, rather than the specific nature of the disability."[65] This seems to be true especially in legislative enactments providing for the education of such children. The Children's Court Act in New York State defines a physically handicapped child as one, "who by reason of a physical defect or infirmity, whether congenital or

[62] Children's Bureau, "Minimum Standards of Child Welfare," *Children's Bureau* No. 60, 1919.

[63] See Table 3, pp. 37, for reference in early studies.

[64] "Special Education, the Handicapped and the Gifted," White House Conference, pp. 22-27, gives a list of some of the surveys to determine the extent of the problem.

[65] White House Conference, *Special Education,* Century Co., 1931, p. 23.

acquired by accident, injury, or disease, is or may be expected to be totally or partially incapacitated for education or for remunerative occupation."[66] The Children's Court Act and the Education Law of New York State make comprehensive provisions for the education of such children.[67]

The Sub-Committee on Education of the Crippled Child, White House Conference, III-F, brought together, from reports of state departments of education and reports of special commissions for care or education of crippled children, valuable information on the status of special education for crippled children in this country.[68] The following states have made legislative provision, mostly permissive, for towns and school districts to establish special classes for crippled children, for substantial state aid and supervision for such towns or school districts as take advantage of the law: California, Illinois, Indiana, Maryland, Michigan, Minnesota, Missouri, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin. In each of the states there appears to be a normal development of special education of crippled children under the stimuli of the legislative provisions. Louisiana provides for special classes by law; Connecticut makes a similar provision if there are ten or more children. Kentucky and Massachusetts make provision for transportation of crippled children to centers where special education is offered. Reports later than these of developments in special education are not available at this time.

The White House Conference reports that 300,000 would be a conservative estimate of crippled children in this country, with approximately one-third of that number in need of special educational opportunities, and fewer than 15,000 receiving such

[66] Section 2, subdivision 7-a, Children's Court Act, State of New York, 1926.

[67] Section 23, Children's Court Act; section 1206, Education Law, New York, 1926.

[68] White House Conference, *Special Education,* Century Co., 1931, pp. 94-112.

opportunities.[69] Heck reports that in the school year 1928-29, there were in 82 cities of 10,000 or over 481 classes with 10,038 crippled children enrolled.[70] A recent report of the New York State Health Commission states that intensive surveys in several areas in the state lead to the conclusion that the White House Conference estimate of 2.5 cripples for every 1000 of the population, and that from 50 per cent to 75 per cent of our crippled children owe their condition to infantile paralysis and tuberculosis, is far too low for New York State. That commission estimates at least 40,000 such children in the state in need of care and education. Recent reports are not available for all states, but reports made at the time the White House Conference study was in progress indicate that the following states are making efforts to discover the crippled children in need of special education and to get them into special classes or to provide "home teaching" for them: California, New Jersey, Illinois, Michigan, Ohio, and Wisconsin.[71]

A survey of the literature on crippled children and their education indicates that at least in some states the problem is a vital one. States in which surveys have indicated the extent of the problem and in which steps have been taken to provide special education for those who cannot with "safety and profit attend the regular school" show considerable progress in the development of plans for taking care of the problem.

The organization of special classes for crippled children would, without question, depend upon the determination of the need of such classes through adequate surveys. Some states, such as Wisconsin, are meeting the problem of educating such children, when the number in any community is negligible, by

[69] *Ibid.*, p. 32.

[70] Heck, Arch. O., "Special Classes and Schools in Cities, 10,000 and Over, 1928-29," pp. 27-29.

[71] The reports consulted for this information are found listed in *Special Education,* pp. 94-112. Because of this previous listing, it seems advisable not to repeat them here.

establishing classes in larger centers and furnishing transportation for the children needing special education.

At this point it seems desirable that we attempt to determine through research studies just what are the educational needs of children crippled to the point that they are unable to attend the regular schools, and just what vocational and educational guidance are best adapted to meet their needs. We need to know something further regarding the mental hygiene problems arising from the segregation of these children for teaching purposes, as compared with those growing out of a plan that places them in the same environment with children physically normal. We need to know whether, with certain types of crippling, the child needs association with normal children for the influence such association may have on his own progress toward health. In fact, we seem to know very little about the child who is crippled as the result of infantile paralysis or tuberculosis, except that in certain areas there are numbers of them needing care and education. What further steps should be taken or what changes should be made in the present practices must wait the results of investigations, few of which appear to be under way.

Special Classes for Cardiac Cases

Standard No. 23, which would provide for special classes for cardiac cases to furnish the education suited to their needs, was not given a median rating of *5* by the group participating in this study. The stated objections to including the standard among the "essential" were based on the idea that the need for such classes was not always present.

This standard stated in slightly different form appeared first in the literature on school health programs in an Office of Education publication during the decade beginning 1920.[72] The volume of literature on the education of cardiac children is not extensive, although Chicago has attempted such education for ten

[72] Office of Education, "Biennial Survey of Education, 1922-24," p. 259.

years,[73] and the New York City School Health Department reports 70,000 elementary school children as cardiac cases with 16 per cent unable to do regular school work.[74]

With the endorsement of the Chicago Heart Association, cardiac children needing special class instruction are placed in classes for crippled children. In 18 of the 28 large cities reporting to the White House Conference on this point, the same practice is followed.[75] Heck[76] found that the 82 cities providing special classes for crippled children including cardiacs among the crippled. The heart specialists participating in the Chicago experiment, after ten years' experience conclude that there are distinct advantages in grouping the cardiac child with the crippled. "With transportation, many children can go to school who otherwise would be kept at home; and with warm lunches, milder forms of activity, no hurry, no stairs to climb, children profit by the school régime."[77]

In the light of the practice in Chicago, it is interesting to note the attitude of Heart Association executives in other cities. The following excerpts from recent correspondence reveal that all specialists in the study of cardiac cases do not favor special classes for the children:

"As for the educational needs of cardiac children, there are no special classes for cardiacs in Philadelphia. Any children whom the doctors want referred to special classes are admitted to the Open Air classes."[78]

"Our Association does not advocate special classes in the public schools for cardiac cases. In some instances, the cardiac children have

[73] White House Conference, "Special Education," Century Co., 1931, p. 64.

[74] Goldberger, I. H., "What the New York City Schools Are Doing for the Child with Heart Disease," *Hygeia,* X(12), December, 1932, pp. 1132-33.

[75] "Special Education," p. 64.

[76] Heck, Arch. O., "Special Classes and Schools in Cities, 10,000 and Over," 1928-29, pp. 27-29.

[77] "Special Education," p. 64.

[78] From correspondence with the Philadelphia Heart Association, 1933.

been put in the fresh air room with crippled children or children who are undernourished, but in general they get their educational opportunities in the regular classroom."[79]

"It has always been our plan to keep the children from thinking of themselves as cripples and chronically sick and for that reason we encourage their mingling with normal children. If they live but a short distance from an ordinary school I am sure it is better that they attend such an institution providing there is sufficient observation of that patient by the home visitor and the physician to insure that there is no undue srain of his cardiac muscle or recurrence of infection."[80]

From the foregoing review of literature on the education of the handicapped child, it appears that the open-air class for undernourished children is passing, and that the belief is growing that its benefits should be made available to all children in the regular classroom; that the presumptive evidence and the literature support the provision that crippled children should be provided with special education when their condition does not warrant their attendance in the regular classroom; that cardiac cases should, when possible, attend school in the regular classroom.

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CHAPTER VIII

STANDARDS RELATED TO OTHER SCHOOL HEALTH PROBLEMS

The Health of Teachers

The application of the criterion of acceptance to the school health standards revealed that among those failing to secure a median rating of *5* from the group participating in the study, three dealt with the problem of teacher health. Two of these, No. 130 and No. 131, received a median rating of *4-Highly Desirable* and the third, No. 124, was given a median rating of *4.5*. Since the index of acceptance was a median rating of *5-Essential,* No. 124 was placed among those for which acceptance was not established. A consideration of these standards follows:

Standard No. 124: "The school should provide a thorough health examination for all teachers in service. The examination should be made by the school physician."

All 52 members of the group responded by rating this standard; 37 of them gave it a place at least as good as *Highly Desirable;* and 6 placed it as low as *Questionable.* The comments of the protesting members indicate that the chief opposition was directed against the second clause of the standard. There was evidence of a strong tendency to respect the preference of the teacher in the matter of selecting the examiner. One comment epitomizes the sentiment expressed in the other statements, "The teacher should be encouraged to seek the competent advice of her own physician." Three comments from others than protesting raters also stress the need to respect the preferences of the teacher; two others would amend the first clause by substituting the word "require" for "provide"; while comments from four others differed from these in that they strongly endorsed the health examination for teachers.

The standard under consideration was first recommended by the Office of Education in 1910,[1] fifteen years after the City of Leipzig began the health examination of its teachers. The median rating of *4.5* in the face of the strong protest against the school's assuming the responsibility for the health examination of teachers, might well be considered as presumptive evidence of a general and fairly strong sentiment in favor of the practice. The extent to which the standard has found its way into practice in this country is indicated in a recent report from the Office of Education.[2] Replies to a questionnaire distributed by that office early in 1930 to all superintendents in the country, yielded data which may be summarized as follows: in the cities reporting from the population group of 100,000 or over, ½ of the school systems provided health examinations to the teachers at the time they entered the system; 2 out of every 25 gave the teachers an annual examination; 1 in 5 examined the teacher on request; and 1 in 10 at other times. Replies from cities between 30,000 and 100,000 indicate that in these cities, I out of every 4 school systems examined the teacher at the time she was hired; 3 out of every 100 provided an annual examination; and 1 out of 5 gave examinations at other times. In the cities between 10,000 and 30,000, teachers were examined at the time of employment in 1 out of 4 school systems; they had an annual examination in 6 out of 100, and on request in 1 out of 25. In the two larger groups of cities, the practice of requiring health certificates from new teachers was followed in only 2 out of every 25 cities; while in the smaller group, certificates were required in only 2 out of every 50 cities. Less than ⅓ of the cities reporting for the groups which include cities of 10,000 or more, either provided health examination for new teachers or required a health certificate.

From these data, there would appear to be a definite lack of evidence to show that school administrators consider health of

[1] Report of the U. S. Commissioner of Education, 1910, Vol. 1, p. 140.

[2] Rogers, J. F., "School Health Activities, 1930," *Office of Education Pamphlet* No. 21, 1931, pp. 6, 15, 22.

major importance among the qualifications of candidates for teaching positions. From the data also, it would appear that schools providing health examinations for children do not as a rule extend the same service to the teachers of the children. This situation, affecting one of the largest groups of employees in the country, is in marked contrast to the situation in industrial and mercantile establishments, where health examinations of employees are considered as measures of economy and efficiency. A consideration of this contrast raises some questions that appear pertinent to the present study: Does the health of teachers interfere with attendance at duty to such an extent that non-attendance becomes an economic consideration? Does the teaching profession as an occupation offer health hazards of which the school should take cognizance? Are there other considerations in relation to the health of teachers which have implications for the school administrator besides that of economy in the expenditure of public money, and that of the occupational health hazard for teachers?

Terman and Almack,[3] as well as Wood and Rowell,[4] present excellent reviews of the researches made on the problem of teacher health since the beginning of the present century. The reading of the researches revealed no additional points of interest, therefore the reviews will not be repeated at this time. They might well be summed up, however, in relation to the questions already raised regarding the health of teachers. Hart[5] from his study of 76,258 cases of absence, 1904-19, among London teachers, and Dublin's[6] study of 3877 cases of absence, 1914-15, of New York City teachers, show a much lower percentage of absence among teachers than among other workers.

[3] Terman, L. M. and Almack, John, *The Hygiene of the School Child,* Boston, Houghton Mifflin Co., 1929, pp. 436-471.

[4] Wood, T. D. and Rowell, H. G., *Health Supervision and Medical Inspection of Schools,* New York, Saunders, 1927, pp. 513-539.

[5] Hart, J. Y., "An Investigation of Sickness Data of Public Elementary School Teachers in London, 1904-19," *Journal of the Royal Statistical Society,* Vol. 65 (3), May, 1922, pp. 349-411.

[6] Dublin, L. I., "Physical Disability of New York City Teachers," *School and Society,* Vol. 4, pp. 564-569; 602-607, October 7 and 17, 1916.

Both studies also reveal the fact that teachers as a group are among the favored in the matter of health. Collis'[7] study of men teachers substantiates the findings of Dublin and Hart so far as the favorable position of the teaching group is concerned. Carrothers'[8] study of the absence of teachers in three American cities during the year 1922-23 found the average loss of days per teacher per year tended to be higher in Cleveland than in either Springfield, Massachusetts, or in Denver. Carrothers accounts for the high absence from sickness causes in Cleveland in part by the failure of the school administration to require a thorough physical examination of all applicants. His recommendations include: a physical examination as one of the requirements for appointment; a grouping of teachers on the basis of the findings of the examination, with provisions for the removal of remediable defects within the year; a re-examination of all teachers absent more than ten days; the health service of the school physician and nurses to be made available to teachers.

Terman and Almack conclude their review of the studies related to teacher health with recommendations for:

The installation of an adequate system of health records.

Satisfactory sick-leave benefits.

Thorough physical examinations, health supervision, and health guidance.

Good physical conditions for teaching.

A rest and recreation program.

The elimination of unnecessary causes of worry and unrest.[9]

Wood and Rowell, after a lengthy consideration of many aspects of the problem of teacher health, conclude with a statement of fundamentals in health supervision of teachers as fol-

[7] Collis, E. L., "General and Occupational Prevalence of Bronchitis and Its Relation to Other Respiratory Diseases," *Journal of Industrial Hygiene,* Vol. 5, pp. 264-278, November, 1923.

[8] Carrothers, G. E., "The Physical Efficiency of Teachers," *Contributions to Education,* No. 155, New York, Teachers College, Columbia University, 1924.

[9] Terman and Almack, *op. cit.,* p. 462.

lows: favorable conditions for teaching; a thorough health examination upon entrance to the system; education in the promotion of her own health; a definite and fair policy in regard to absences for illness; a thorough health examination before granting tenure; a yearly health examination, made in accordance with uniform standards provided by the school if the examination itself is not provided by the school; the removal of sources of worry, when possible. In their summary of the responsibility which teacher training institutions should assume in relation to the health of their students, the authors stress: a careful health examination on entry; such medical supervision as the conditions demand; definite instruction in matters of hygiene; supervision of student load, etc.; guidance into the line of work adapted to the abilities of the student; guidance in recreation and wholesome living through the type of life provided in the institution.[10]

"Teacher Health,"[11] is a report on the responses from 48 cities to a questionnaire related to the health supervision of the teachers of the public schools. It differs from some of the other studies in that it describes some of the programs of health supervision for teachers. The recommendations are classified on the basis of the group to whom they were addressed and contain pertinent suggestions for community and school board, administrators and supervisors, and teachers themselves. The recommendations include: health examination of teachers, provided by the school; the assumption of some responsibility for proper living conditions of teachers, through adequate salaries, by provisions of teacher homes, or by securing a selective list of available living accommodations in the community; the school should furnish recreational facilities and outdoor recreational pursuits among teachers.

There are considerations in relation to teacher health that have implications for the school administrator, entirely apart from the problem of school economy, and the occupational

[10] Wood and Rowell, *op. cit.*, pp. 519-539.

[11] "Teacher Health," Monograph No. 4, School Health Bureau, Metropolitan Life Association, 1928.

health hazards of the teaching profession. Terman and Almack, and Wood and Rowell suggest where these problems may be found. Two recent studies throw further light upon them. The first of these, by Mason,[12] deals with the functional disturbances of teachers committeed to hospitals, the second, by Barker,[13] with the adjustment of teachers in relation to their efficiency as judged by the school administration. Mason studied 700 teachers of New York State, so badly maladjusted that they had been placed in hospitals. She gathered information regarding individual cases from the hospital records and other sources, analyzed the contributing causes of the maladjustment, and compared the teacher group with the population in general in the same hospitals. Her findings show that psychoses, dementia praecox, and manic depressive insanity lead in the mental diseases of teachers; that paranoia, which had fourth place in the teaching group, was found in that group much more frequently than in the general population of the hospitals to which the teachers had been committed; that teachers tended to seek hospital care earlier than the general hospital population, and that while teaching as an occupation could not be considered a direct cause of the disturbance, school troubles constituted an important item in the contributing causes as revealed in the study. Physical health disturbances also had an important place. Mason's conclusions, briefly summarized, were as follows: In view of the physical disorders in connection with the disturbance, a more important place should be given to the health examination of teachers at the time of employment, and to a program of health service and guidance which would aid the teacher to safeguard against such disturbances, and to administrative provision for leave of absence, even forcible, when the health of the teacher justifies it.

Barker's study, just completed, concerned itself with the ad-

[12] Mason, Frances, "A Study of 700 Maladjusted School Teachers in New York State," *Mental Hygiene,* Vol. 15 (3), pp. 576-599, 1930.

[13] Barker, M. E., "A Study of the Adjustment of Teachers in Relation to Their Efficiency in Teaching." A doctor's dissertation, Teachers College, Columbia University, *MS.*

justment of teachers in relation to their success in teaching. She made case studies of 60 classroom teachers; through an interview technique, secured information regarding the various adjustments of the teachers studied; submitted an analysis of her findings to a group for evaluation in terms of efficiency of teaching; and compared the evaluation of individuals in the group with the efficiency rating given by the administration of the school system in which the study was made. Her results show that all the superior teachers tended to be at least one sigma above the mean in all the adjustments considered, and that all the teachers considered low in efficiency tended to be at least one sigma below the mean in all adjustments. She did not find evidence, however, which would allow of a conclusion regarding the group that lay between the best and the poorest. Of the teachers studied, 4 had not been absent during the year preceding the study. The total number of days absence, or 366, give an average of 6.1 for the whole group or 6.5 for the group responsible for the absences. This is a much higher average than that revealed in any of the other studies. The emotional situation related to professional growth appeared to figure in the adjustment more frequently than other factors; although the emotional situation related to personal health appeared also to be an important factor. The information gathered in Barker's interviews with teachers, yielded the fact that teachers themselves had not a very clear understanding of what constituted a thorough medical examination. A visit to the doctor regarding some trivial health matter, a heart test taken for the purpose of qualifying for a swimming class, or an inspection by some specialist in physical education, frequently represented the teacher's conception of a medical examination. These findings appear to support the recommendations of Carrothers and Mason relative to the health examination of teachers.

Spencer's[14] study which includes a survey of the health serv-

[14] Spencer, Mary, "Health Education for Teachers," a Contribution to Education, No. 589, Teachers College, Columbia University, New York, 1934.

ice which teacher training institutions provide for their students, indicates a growing tendency toward the provision of medical health examinations and medical health service for the students. A study reported to be now in progress in the University of Minnesota proposes to measure the educational influence of the health service offered in teacher training institutions through a study of the practices of the alumnæ in seeking medical examinations and medical service in the years subsequent to graduation.

The review of the literature on teacher health reveals the fact that few school systems require either health examinations or health certificates for new teachers, and fewer still extend to the teacher the health service made available to the school children; that teaching as a profession does not offer the number of health hazards found in most other occupations; that the absence of teachers because of illness is lower than that among other groups, although a more recent study than Dublin's or Hart's offers data to show that in some cities the absence tends to be greater than in others. Recent studies of maladjustment among teachers under treatment in hospitals or actively engaged in classroom work, indicate that school troubles and physical health are important contributing causes of the maladjustment. One of these studies supports the conclusions reached in one of the studies on absence, that teachers should have a medical examination at the time of employment, and that medical health service should be made available to them throughout their term of service. The study carried on through the use of an interview technique yields information regarding the understanding of a medical examination within the group interviewed. This information might well raise some doubt as to the advisability of throwing the whole responsibility of selection and arrangement for a medical examination upon the teacher herself.

A recent study of the practice of providing health examinations and health service to pre-service teachers, indicates that this practice is growing in teacher training institutions as well as in the liberal arts colleges; another study reported to be

under way and which aims to measure the educational value of the health service given in the teacher training institution represents the type of investigation much needed at the present time.

Standard No. 130: "The school should provide wholesome living conditions for teachers in communities where satisfactory accommodations are not available."

All 52 members of the group rated this item; 41 gave it a place at least as good as *Highly Desirable,* and 3 rated it as low as *Questionable.* But one comment was offered, "I question the value of the provision for the health of teachers." It may be of interest at this point to note that the comment just cited came from an eastern person, and that the protests came from workers located east of the Mississippi River.

The question of school responsibility for provision of living accommodations for teachers is probably related as closely to the practical problem of attracting and keeping a competent teaching staff as it is to the problem of teacher health. Wherever the former problem is vital, however, the chances are that the factors conditioning it also condition the problem of teacher health. In the west, where the population is widely scattered, and in the south where the tenant farmer is rapidly replacing the farm owner, the need for providing living accommodations for teachers tends to become acute. It is barely possible that the automobile and the improved country roads have operated to reduce the need of special home provision near the school. No study of these influences has been found by the writer.

The literature on the problem of teacher homes is not extensive; two studies made in the last decade lead in importance among those that have been made. Muerman[15] in an Office of Education Bulletin gives a report of his survey of the practice of providing such homes, and the state legislation on the subject, together with a consideration of the advantages and disadvantages connected with the practice. He found, 10 years ago, that three-fourths of all the teacher homes were in 10 states

[15] Muerman, J. C., "The District Owned or Controlled Teachers' Homes," *Office of Education Bulletin,* No. 16, 1922.

in the west and the south; that 15 states had laws permitting school authorities to construct, own and control such homes, and 3 states had enacted laws forbidding the use of school funds for such purposes. In his consideration of advantages and disadvantages, he found that in the securing of better teachers, the retention of teachers for a longer time, and in provision of comfortable living quarters with better food and greater freedom for the individual teacher than could be otherwise possible, the advantages of the teacher home outweighed the disadvantages.

Lathrop,[16] in a similar survey made three years later, reviewed the progress made subsequent to Muerman's study, and added the weight of her recommendations to those of Muerman's. A more recent report than either of the two just cited is that of the Sub-Committee on Rural Schools of the White House Conference. In the consideration of the whole problem of the health of the child in the rural schools the report stresses the point that the solution of the problem might be more readily secured with better teachers, and teachers who will remain in the same rural school for a longer period of time. The report links not only salary, but living conditions to the problem of securing and retaining competent teachers.

Health Education Materials

Five standards relating to health education materials, three of which make provision for specific types of testing materials, failed to secure acceptance in the present study. Standard No. 232 which specified the use of "Guess Who" tests received a median rating of *2,* the lowest accorded to any standard in the whole set. A statement of each standard, the treatment given each by the raters, and a consideration of each in the light of recent literature on the problems involved follows:

Standard No. 144: "The school should supply new and replacement materials on the request of the teacher."

[16] Lathrop, E. A., "Many Rural Districts Provide Comfortable Homes for Teachers," *School Life,* Vol. XI (3), pp. 47-49, November, 1925.

Forty-nine of the 52 members of the group passed judgment on this item, with 38 (77.5 per cent) placing it as high as *Highly Desirable* and 6 (12 per cent) as low as *Questionable.* The 8 comments offered reflected a lack of confidence in the ability of the classroom teacher to make decisions on the materials needed for health education in her classroom. This lack of confidence is signficant. In regard to it the following questions appear to be pertinent:

Is there a real inability among classroom teachers to decide what materials are necessary for health education and when the materials are needed?

If this is so, does the inability indicate a failure in teacher training to provide for that very important aspect of the teacher's preparation?

Does it indicate a failure of public-school administrators and supervisors to furnish the necessary guidance for in-service teachers?

Does it means that the content materials of health education are so technical that only a specialist is qualified to decide what shall be given and when it shall be offered?

Does it mean that the content and materials for health education have been so recently developed that they have not had time to find a place in either the pre-service or the in-service guidance of teachers?

The provision in Standard No. 144 finds support in a recent statement by Kilpatrick:

"Any one who is learning to be a teacher, then, must have full opportunity to become more and more intelligently self-directing in the field of education; must personally think through under guidance the many varied problems of the field; must understand the what and the why . . . must learn how better and more intelligently to choose means; must learn how to criticize one's own aims and means as new developments shall show new bases for judging."[17]

The provision for teacher growth suggested in the preceding statement is further exemplified in a recent rating[18] scale for

[17] Kilpatrick, W. H., "The Training of Teachers for a Progressive Educational Program," *Bulletin, National Council of Primary Education,* Vol. XIV (2), April, 1931, p. 20.

[18] Mort, P. R. and Hilleboe, G. L., *Rating Scale for Elementary School Organization,* New York, Teachers College, Columbia University, 1930.

judging the organization of the elementary school, in which the standard in question is offered as a criterion. The theory is accepted in a report of the Joint Committee in 1930,[19] in the consideration of the preparation of teachers for their work in Health Education.

Standard No. 211: "Materials that show a child how to acquire a skill should supplement written directions with charts and drawings."

Forty-nine members of the group rated this standard, with 39 (79.5 per cent) giving it a place at least as good as *Highly Desirable,* and only one rating it as low as *Questionable.* Two of the three comments reflected an opinion that the point was unimportant. The third comment suggested the addition of "demonstrations."

The basis of the provision in Standard No. 211 is an understanding of the element of "form" in learning, i.e., getting clear ideas of what is to be done and how to do it. This is very well expressed by Bonser[20] in relation to the teaching of skills in industrial arts:

"Showing one how to do a thing is usually more effective than telling him how."

From the standpoint of preparation of teachers for work in the progressive schools, it appears that provision should be made for her growth in ability to select materials for her use, and to determine when such material is needed. In relation to the mastery of skills, it seems to be a sound procedure to select materials and activities which aid the child to get the clearest possible idea of what is to be done and how it is to be done; and teaching materials might well be selected with that principle in mind.

[19] Joint Committee on Health Problems in Education, National Education Association and American Medical Association, Thomas D. Wood, Chairman, "Health Education—A Program for Public Schools and Teacher Training Institutions." Washington, D.C., National Education Association, 1930, p. 241.

[20] Bonser, F. and Mossman, L. C., *Industrial Arts for Elementary Schools,* New York, Macmillan Co., 1925, p. 45.

Standard No. 230: "The tests should include test situations in which the child reports what he would do under the circumstances."

Fifty of the 52 raters gave this standard a place, with 34 (68 per cent) giving it a rating of *Highly Desirable* or better, and 4 rating it as low as *Questionable*. There were no comments on this item.

Standard No. 231: "The tests should include self checking on practices." (Must be safeguarded because of sources of error.)

Forty-nine members of the group rated this item, with 39 (79.5 per cent placing it in a position at least as good as *Highly Desirable,* and 7 (14 per cent) rating it as low as *Questionable.* Two comments only were offered. One stressed the importance of safeguarding against the sources of error, the other offering support if the standard were to be planned for certain grade levels. The levels were not specified.

Standard No. 232: "The tests should include rating of others on health practices, such as a 'Guess Who' test."

This standard drew more fire than any of the others. Only 45 of the 52 members of the group offered a rating on it; of these, but 13 (27.6 per cent) rated it at least as good as *Highly Desirable,* while 21 (44.6 per cent) gave it a place as low as *Questionable.* The comments revealed an opinion that the practice favored spying, and might lead to undesirable learnings.

All three of these standards have the approval of the specialists in test making, as indicated in the fact that Hartshorne and May used all three techniques in their study of character.[21] The Joint Committee on Health Problems in Education[22] accept the techniques as adapted to the use of testing in health education.

In the light of the opposition, however, it is likely that the

[21] Hartshorne, H. and May, M. A., *Studies in Deceit,* New York, Macmillan Co., 1928.

[22] Joint Committee, *op. cit.*

standards proposed will have to await experimental evidence as to their value, before they will be acceptable to the school health workers as a whole.

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CHAPTER IX

A SUMMARY OF THE EXAMINATION OF INDIVIDUAL STANDARDS

From the review of the literature on health examinations, it appears that the trend of opinion is toward a fuller recognition of the responsibility of the school for the health examination of school children; and toward the provision of an annual examination, except when the interests of the quality of the examination call for the sacrifice of frequency. There is noted also a movement among health and social agencies in favor of an integration of community services in the interests of the health of the child. Except in the literature of a limited field, the recognized need of a special examination room is not at present apparent.

A strong approval of teacher testing of vision and hearing is revealed in the literature on legislation and present practice in the field. There appears to be a lack of provision for guiding the teacher in the mastery of the testing techniques, and a corresponding disapproval of the type of testing which results.

New points of view are creeping into the literature on dental care, although surveys of field practices and legislation indicate a strong support of school dental examinations. That parents and children are educated to the point at which they are independent of the school dental examination is not apparent. That community clinics serve to promote improved reparative care of the teeth of the school child is probable. That the educative function of the school should include both parent and child in the care and protection of the teeth seems logical.

The sharp disapproval expressed by the raters on the provision for an isolation room for each school and the meager support given to the standard in the literature, indicate that Standard No. 28 will probably await concrete evidence of effective and satisfactory use of such a room before it may be accepted

by workers in general. It appears also, that the means offered for furnishing parents with the needed information for home-treatment of specific infections, through the teacher-parent relationships, tend to be more effective and satisfactory than the traditional use of the home-treatment slip or notice.

The literature on immunization against diphtheria reveals the recognition of the problem as a pre-school one, with the function of the school as one of continuous education favoring immunization as a part of the routine care of infants by the family physician. It appears that the time is past for educational demonstrations of immunization through the school.

The literature on psychological and mental hygiene services in the public schools indicates an increasing recognition of the need for such service and for teacher guidance in recognizing and handling the cases of maladjustment which she meets in the classroom.

A contradictory situation appears to obtain in relation to supplementary feeding of school children, with the literature giving little support to the school's assumption of such services; but evidence of a strong tendency of schools and patrons to sanction such service as a school function during the present depression.

The opinions on school playgrounds as reflected in the literature appear to favor standards expressed in terms of minimum acreage, with the provision for increase on the basis of a prescribed number of square feet per pupil. Specialists seems to lean toward the opinion that it is better to err on the side of providing too large a playground than one that is too small.

As indicated in the literature on school building construction, the height of the building should be considered in relation to the type of fire-resistive construction in use; the definition of such terms as "story" and "basement" is necessary to a discussion of any question of height, or of the use of a basement of the building; and buildings of Type III, according to Salstrom's definition, should be restricted to two stories.

The objection to the outward-swinging door appears to have

been met by the plan for construction of classroom and passageways providing for the recessed doorways which allow the classroom door to swing outward against the wall of the recess without obstructing the passageways. The provisions for classroom lighting as found in Standard No. 60 are in accord with the recommendations of specialists in the fields of lighting, of child hygiene, and of school hygiene. As indicated on page 85, presumptive evidence favors the acceptance of this standard.

Investigations and tests approve the use of genuine vitreous china (tested by the government red-ink test) for toilet bowls, because of its quality of non-absorption. There is a decided difference of opinion on the question of the automatic toilet flush, the objections being directed against the lack of educative value of the device. There is also a difference of opinion on the question of ratio of toilet fixtures to enrollment. The studies reported on the determination of use as a basis for ratio reveal that the counts were made only in periods set aside for the use of toilets by the school administration. No indication is given that any consideration of the possibility of individual differences in elimination rhythms of children received attention.

The provision of shower baths in the elementary schools appears to have been made on the basis of the type of neighborhood in which the school was located, and on the internal organization of the school rather than with a view to beginning an education in community health practices which must function in the succeeding school levels. Whether there is a need for showers in the elementary schools of well-favored districts, might be determined by a study of the bathing habits of the boys and girls of the high school and junior high school age of that neighborhood. With respect to the use of floor preservatives and dust reducing materials, the literature gives equal favor to wax and a good light oil, but the health workers object to the wax on the basis of the possible safety hazard involved.

The literature on school ventilation indicates that the objectives of school ventilation can be met adequately (in a class-

room) through an air supply of from 10 to 15 cubic feet per minute per pupil; and that a floor space approximating 15 square feet per pupil (in classrooms) seems to favor a reduction of absenteeism of children due to sickness.

There are arguments favoring homogeneous grouping, and equally strong arguments against it. Most of the debate centers about the high school age. There appear to be definite needs of the child that are met through some sort of ability grouping, and other needs which, according to the opposition, cannot be met through such a plan as that proposed by the supporters of homogeneous grouping. Among educators and hygienists there appears to be a growing belief that the best interests of the elementary school child are served through a policy of flexibility of classification and grouping of children.

The experimental evidence on the superior achievement resulting from special grouping of the gifted child is not very convincing. From the standpoint of mental hygiene, however, the presumptive evidence appears to favor special grouping of the upper 1-2 per cent of the elementary school population.

In relation to the provision of special classes for the handicapped child, the weight of evidence points to the reservation of the open-air class and school for the two per cent of the school population showing signs of juvenile or beginning adult tuberculosis; while the benefits of the open air schools and classes are extended to the regular classroom. The evidence favors a special class for the crippled child, when his disability interferes with his attendance in the regular classroom. Opinion differs regarding the education of the cardiac child. There appears to be a trend, however, toward the practice of keeping cardiacs in the regular classroom under the observation of nurse and doctor whenever the child is able to attend regular school.

It appears that few schools require health examination of new teachers and that fewer still extend to teachers the same medical health service which the children receive. The results of investigations on teacher health on the whole, favor health examination for teachers not only as a part of the health serv-

ice but as an educational factor as well. The literature on teacher homes owned and controlled by school districts is not extensive. The belief that there are other and better ways of solving the problem of living accommodations of teachers appears to be gaining ground; and the suggestion frequently appears that the responsibility of the school lies in the provision of salaries which make it possible for the teacher to live where she can do so comfortably and happily. The idea of the school's responsibility for making some provision for teacher recreation has not developed to the point where definite recommendations have won favor with the administrator or the teacher. There is here a fruitful field for study.

From the standpoint of preparing teachers for work in schools where there is an ever increasing demand for her participation in curriculum building, and in planning procedures, it appears that provision should be made for her growth in ability to select materials for her use in the classroom and to determine when such material is needed. In relation to the provision for the mastery of skills in the elementary school, it seems to be a sound procedure to select materials and activities which aid the child to get as clear an idea as possible of what is to be done, and how it is to be done; and teaching materials might well be selected with that principle in mind.

So far as specific tests in health education are concerned, all available testing techniques might well be tried experimentally, and the decision regarding their future use be made on the basis of the results of the experimental use. Where the use of any technique appears to foster the development of undesirable behavior, such techniques might well be restricted to experimental use in the hands of experts until its merit is established or its use discredited.

Summary

The purpose of the study was twofold:

1. To discover controversial issues in the available school health standards.

2. To discover means of clarifying the issues and possibilities for resolving the controversies.

As reported in Chapter III, the study proceeded through the following steps:

1. *The collection of standards.* The task involved an examination of the literature bearing on school health since 1867, including:

a. Reports and studies issued by the Office of Education.
b. Special interpretive reports of research and practice in school hygiene and health in Europe and America.
c. Reports of conference studies in which proposed standards had been critically examined.
d. Reports of school health surveys.
e. Yearbooks of various educational organizations and various departments of the National Education Association.
f. Texts on school hygiene and school health, and those on general educational problems.

2. *The organization of the standards into an inventory list.* The list of standards thus collected was refined by retaining on it only those standards which were generally accepted. The standards were then organized into an inventory list, the form of which corresponded to the general plan of the school health program proposed by the Department of Superintendence of the National Education Association, 1926, and reported in the Fourth Yearbook of that organization. The standards collected were fitted by the investigator under what seemed to her to be the appropriate headings.

3. *The preparation of a rating scheme.* It became necessary to throw the inventory list into such form that through it one might discover whether the standards were acceptable to those actually engaged in school health work in the field; and if not, where the controversial issues lay. To accomplish this purpose, a rating scheme was devised (see Chapter III for details). In the rating scheme, the index of acceptance chosen was such that, in order to be accepted, a standard must receive as median rating the highest possible value in the scheme used.

The use of this index of acceptance provided for isolating only those standards in which there were items objectionable to the rater. (It might be claimed that the grouping of several items in a single standard may have operated to produce the isolation of standards, rather than the rating scheme itself; but this has been explained on pages 56-57.)

4. *The presentation of material to raters.* The task of securing raters involved the selection of those who can and do exert an influence on school health programs, provision for representation of the various subject-matter fields related to school health, and the reduction of the bias of any one educational institution. A preliminary selection was made from the attendance rolls of school health conferences. The list so obtained was reduced by retaining only the names of those who had attended two of the three conferences held since 1925. It was further reduced by retaining only the names of those who held supervisory or administrative positions at the time the investigation was made. A jury of three reduced the list to sixty names. Each juror made an independent selection of fifty persons who in his judgment seemed most competent to render the desired evaluation. In their selection the jury bore in mind the necessity for maintaining the representation of all fields connected with the school health program. They added to the list the names of important leaders not appearing on the original list. The raters thus selected were provided with the rating sheet, the rating scale, directions for rating, and a letter of explanation of the problem.

5. *Study of results.* This part of the study included:

   a. Finding the median ratings of each standard.
   b. Isolation for further study any standard receiving a median rating below 5 (highest possible rating).
   c. Considering the approval and disapproval of each standard as revealed in the individual ratings.
   d. Considering the comments made by individuals on the isolated standards, for the purpose of discovering reasons for the disapproval.

6. *Study of the isolated standards.* The standards described above as isolated standards were critically studied to discover:

a. The extent to which present practices and trends in school health supported the provisions of the standard.
b. The extent to which the findings of research might give sanction to the standard.

This was accomplished by scrutinizing each standard in the light of:

a. Recent studies of legislation and state regulations related to school health.
b. Recent studies made by the Office of Education of practice in the field.
c. The findings of recent investigations related to problems of school health.
d. Authoritative opinion as expressed in current literature.

* * *

The study of school health standards is reported in three parts as follows:

a. Backgrounds as revealed in the literature on school hygiene and school health.
b. Determining the present status of acceptance of school health standards.
c. An examination of individual standards not accepted in the present study.

As reported in the body of the study, the findings are as follows:

1. There is a wide range of school health standards that are acceptable to the school health workers in the field at the present time.
2. For the most part, the isolated standards involve questions that are still unsettled.
3. Certain standards which were generally accepted in the past are now being questioned, if not actively disapproved.
4. Progress is shown in the movement of certain standards from general disapproval toward general approval.
5. The consensus of opinion is moving toward a fundamental edu-

cational emphasis in the school with an approval of the utilization of the services offered by community agencies where such a plan favors a more effective educational program.

In this study the review of the literature on school hygiene and school health reveals a wide range of school health standards generally accepted by those participating in conferences on school health, and by students of school health problems (see Table 3, p. 38). The review of school health surveys indicates that all the best ideas on school health programs are in operation somewhere, but that a complete school health program has been found nowhere. Further review of studies of the school health program shows a growing recognition among educators of the need for a set of working standards for a comprehensive school health program.

The results of the present study indicate that controversial issues in school health standards can be isolated; that means are at hand through which the issues can be clarified; and that the resolution of many of the controversies could be secured through experimental studies.

The present study reveals:

1. The value of such examinations of school health standards as that represented by the working conference in which the standards are subjected to a critical scrutiny by workers in the field.
2. The need for experimental studies on specific questions which remain unsettled because of the lack of experimental evidence.
3. The possibilities of a series of studies similar to the present one but limited in scope, and pursued for the purpose of examining troublesome questions involved in the initiation, administration, and effective operation of the section of the program studied.
4. The contribution of surveys of present practice in school health as a means of clarifying issues in unsettled questions related to school health standards. (The value of the contribution would undoubtedly be increased through better survey techniques and better trained survey staffs.)
5. A tentative set of working standards for a school health program for further consideration of school health workers and students of school health problems.

APPENDIX

TABLE 5

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

The ratings were given by a selected group of fifty-two specialists in school health and school admiinstration in 1931, and by a group of professional students representing four different but related fields in Teachers College, Columbia University, summer 1930.

The median ratings in this table are the medians of the distribution of the ratings which individual members of each group gave to a specific item.

The numbers within the parentheses refer to the source of the item. The number at the left of the colon stands for the reference as given in *The Bibliography of Sources Used for the Selection of School Health Standards,* pp. 241-251.

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	ADMINISTRATION OF THE HEALTH PROGRAM (44:38; 68:477; 73; 110:27)		
1.	The direction of the school health program is the responsibility of the administration of the school system.....	4	5
2.	The assistant superintendent directly responsible for the school health program should be an educator with an intelligent understanding and appreciation of the values of medical health service, health education, and physical education	4	5
	HEALTH SERVICE		
	A. HEALTH EXAMINATIONS, CORRECTION OF DEFECTS, AND CONTROL OF COMMUNICABLE DISEASE		
	1. *Discovery and Correction of Defects*		
	a. *Medical and Health Examinations* (5:xiv-xv; 6:18-20; 37:19-22; 45:44-45, 51; 48:13-34; 50:454; 54:1-18; 55:1290; 68:477, 478; 70:267; 79; 80; 83; 86; 88; 90; 92; 94; 97; 98; 99; 100; 110)		

* In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
3.	The school should provide annually for a thorough examination of each boy and girl..	4	4
4.	A physician should make the health examination	5	5
5.	The classroom teacher should make a preliminary test of the vision and hearing of the children	3	3.5
6.	A special room should be provided for the health examination	4	4
7.	The examination should have its educational aspects, which are interpreted to the parents and teachers	4	5
	b. *Mental Examination* (7:460-68; 39:87; 68:484; 81)		
8.	The school should provide adequate psychological service for determining the ability levels of children	4	4
9.	The school should provide a thorough and adequately trained mental hygiene staff for the study of personality difficulties.....	3	4
10.	The classroom teacher should be helped to recognize personality problems in their early stages and should be encouraged to refer these problems to the mental hygiene staff.....	4	5
	c. *Dental Examination* (30:69; 45:48; 55:1301; 70:191-194; 75; 110:58, 232-36)		
11.	The school should provide a complete dental examination for each child at least once a year	4	4
12.	Dental needs and dental facilities of the community will determine the advisability of offering treatment as a part of the school health service	3	5

* In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	d. *Records* (95; 110:171-231)		
13.	Complete and continuous health records including personality records should be kept for each child throughout his school life.....	4	5
14.	These records should be kept in the office of the school administrator and be made available to the classroom teacher and to the departments concerned	4	5
	e. *Follow-Up* (20:122; 30:151-160; 44:38; 74; 80; 83; 84; 97; 98; 100; 110:47-48, 56)		
15.	The school should make a report to the parents of the discovery of remediable defects, and should make recommendations for cooperation of parents and family physician...	5	5
16.	Provision should be made for reference to the proper health authorities of all boys and girls who need medical attention.....	4	5
17.	The school should make provision for a contact with the home to secure coöperation in the correction of defects.....	4	5
18.	A report of the examination and the physician's recommendations should be made available to all teachers and departments coming in contact with the child when the interests of the child demand it	4	5
	f. *Adjustments Should Be Made to Meet Varying Needs* (45:51; 110:336, 363, 368, 369, 376, 383)		
19.	Through changes in program for cases which require special guarding, as pupils with heart lesions, deficient vision, deficient hearing, and nervous and under-nourished children	4	5

* In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
20.	Through open air classes for severely run down and under-nourished children	4	4
21.	Through classes for deafened children to help them become proficient in lip-reading.....	4	5
22.	Through sight-saving classes for children in need of that service, and should be under the control of an oculist and physician.....	4	5
23.	Through special classes for selected and favorable cases of cardiac children to furnish the advantage of an education especially suited to their needs.....	4	4
24.	Through special classes for children who are crippled to the extent that their attendance in the regular classroom is difficult.....	4	4
25.	Through special classes for children retarded 3 or more years, that they may have the benefit of an education which is most profitable to them	4	5
	2. *Control of Communicable Disease*		
	a. *Detection* (30:159; 37:23-28; 41:381-390; 45:43; 54:19-23; 56:393; 90; 92; 94; 95; 97; 98; 99; 100; 110:108, 211)		
26.	The teacher trained in detecting early signs of departure from normal physical health should make a rapid morning inspection of all the children for the purpose of determining whether their health condition justifies their presence in school	4	5
	b. *Isolation* (30:159; 110:31)		
27.	A child showing signs of communicable disease should be removed from the room and referred to the doctor or nurse	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
30.	All exclusions should be reported to the Board of Health immediately	5	5
31.	The diseases for which children should be excluded from school are: smallpox, scarlet fever, measles, chicken pox diphtheria, tonsilitis, whooping cough, pediculosis, mumps, scabies, trachoma, ringworm, impetigo, venereal disease, tuberculosis, influenza, and the common cold	5	5
32.	When a child is excluded a note should be sent home advising the parent that the child should not be returned to school until he can do so without danger to himself or others	5	5
33.	In case of pediculosis or scabies home treatment slips should be sent home with the child	4	4
	c. *Readmission* (30:158; 110:121)		
34.	A physician's certificate satisfactory to the school authorities is essential for readmission after a child has been absent because of illness	5	5
	d. *Immunization* (7:399; 55:25, 199-201, 1312; 110:5-8, 165)		
35.	Written certificates of successful vaccination should be required of all pupils entering school. These certificates should become a part of the health record	4	5
36.	The immunization records, accurate and easily available for teacher and physician should be a part of the school health record	4	5
37.	The school should provide for toxin-anti-toxin immunization	3.5	4
38.	This immunization may be given by the Board of Health	3	4

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	B. HEALTH CONTROL OF THE SCHOOL PLANT AND SCHOOL MANAGEMENT		
	1. *Hygiene of the School Plant (Sanitation)*		
	a. *Site* (7:407-10; 9:1-11; 11:19; 12:12-13; 18a:1348; 21:20-24; 22:26-32, 68-85; 37:12; 42:35; 55:1288; 57:523; 60:9-10; 61:9-10; 90; 93; 94; 96)		
39.	The school should be readily accessible to the population which it serves. No child should be required to walk more than a mile and a half	4	5
40.	The surroundings should provide a maximum of sunshine, fresh air, and beauty, and should be free from noise, dangers, and undesirable influences	4	5
41.	Fifty square feet of school grounds per child represents the irreducible minimum for all new building programs. If play space is not otherwise provided, 120-150 square feet per pupil will be necessary for a satisfactory school ground	4	5
42.	For high schools no site of less than ten to twelve acres will suffice for the outdoor activities of the boys and girls	3	4
43.	The site should be located on high land, well drained, and free from drainage from contiguous ground	4	5
	b. *Construction* (7:411-18; 11:21-22; 18a:1348; 21:27-29; 29:1-34; 35:31, 34, 39; 36:48; 60:10-14, 34; 61:11-20; 93; 94; 105:131-145; 110:444-512)		
44.	All school buildings should be constructed of fire-resistive material, and should not be more than two stories above the ground floor. The basement should be used only for the heating plant and similar services	4	4

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
45.	Corridors should provide ready access to stairways and permit rapid circulation to every part of the building	5	5
46.	The main corridor should not be less than 12 feet wide, and the secondary corridors 8-10 feet wide. All corridors should be free from obstructions	4	5
47.	All stairways should be fire proof and should be constructed in two runs from story to story, with broad landings	5	5
48.	Stairways should be sufficient in number to empty the building in three minutes or less	5	5
49.	No closet for storage purposes should be placed under the stairways	4	5
50.	Adequate lighting, natural and artificial, should be provided throughout the building. The switches should be near the exits	5	5
51.	There should be one exit for every 300 children. Two pairs of double doors, each door not less than 3 x 7 feet, and opening outward, should be furnished for the main entrance. All entrances should be free from obstructions.	5	5
	c. *Fire Protection* (51:303-310; 60:14; 110:488)		
52.	Fire extinguishers, accessible and prominently exposed, should be provided for every 2,000 square feet of floor area.	5	5
53.	Water supply and fire hose should be provided and readily accessible in case of emergency.	5	5
54.	All standard stairways should be developed as fire escapes, and no room exit should be more than 100 feet distant from a fire escape or stairway.	4	5
55.	Fire alarms should be centrally located, and in full view, and self-closing fire doors should be provided for all the stairways.	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	d. *Classrooms* (7:413-424; 9:56-63, 66-86; 11:33-36, 45-49; 18a:1849; 21:53-79, 82-97; 23: 532-534; 37:16-18; 44:38; 52:185-187, 55:1281-2; 60:31-35; 93; 110:459-74)		
56.	Rooms should be easy of access to exits, stairways, drinking fountains, toilets, and special rooms.	4	5
57.	Fifteen square feet of floor space and 200 cubic feet of air space should be allowed as a minimum for each child.	4	4.5
58.	Rooms should be rectangular, with windows on the long side, and with doors opening outward or swinging in both directions.	4	4
59.	The walls and all other surfaces should be in flat dull colors without varnish.	4	5
60.	A battery of windows should be placed for lefthand lighting, and should reach within six inches of the ceiling and three feet of the floor. The windows should be not more than 12 inches apart. There should be a dead wall space of five feet at the front of the room.	4	4
61.	The glass area in the battery of windows should equal 20 per cent of the floor area unless there are obstructions, in which case the glass area should be increased.	4	5
62.	Plain glass should be used in all windows, and adjustable transclucent shades should be provided.	4	5
63.	Semi-direct or indirect artificial lighting should be provided in keeping with the standard of 10 foot candle power on each desk without glare or shadow.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
64.	The seats should be individual, adjustable, and so constructed that the children may sit comfortably and properly in them.	4	5
65.	The seats should be adjusted twice a year to the size and need of the pupils. The adjustment should permit the child to assume a normal writing position without rounding or lowering the shoulders, or sitting forward in the seat.	4	5
66.	The blackboards should be placed opposite the windows, at a height convenient for the children who are to use them. The blackboards should be equipped with open, wire-covered chalk trays, and dustless crayons should be supplied.	4	5
	e. *Facilities*		
	(1) *Drinking Fountains* (7:428-30; 55:1073; 60:30; 110:475)		
67.	Drinking fountains in the ratio of 1 for every 50 children should be provided in every school. They should be sanitary, easy to use, and accessible to classrooms, play rooms, gymnasia, and special rooms, never in toilet rooms.	4	5
68.	The water supply should come from an approved source, be cool, and plentiful.	5	5
	(2) *Handwashing* (7:413; 25:153-4; 110:475)		
69.	Wash basins adapted to the height of the users should be provided near all toilets in the ratio of one basin to every 15 pupils. ..	4	5
70.	Hot and cold running water, soap, and sanitary towels should be provided.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	(3) *Toilet* (7:412-413; 9:105-123; 50:56-57, 69-70, 87-88; 51:176-177; 55:1293; 60:30-31; 110:475-77)		
71.	Separate toilets for girls and boys should be provided on each floor, accessible to the classrooms. They should never be placed in the basement.	5	5
72.	The construction should provide for a maximum of sunlight and ventilation. The floors should be of tile, and the wainscoting of non-absorbent material, readily washable.	4	5
73.	The toilet bowls should be of porcelain with automatic flush, and should be provided in the ratio of one seat for every 15 girls, and one for every 25 boys. One urinal should be provided for every 15 boys.	4	4
	(4) *Play* (6:25; 21:14-17; 37:41-42; 44:32; 60: 10, 35, 37; 87; 101; 107:346)		
74.	Play rooms should be provided in all elementary schools. Where no gymnasium is provided, the play room should be suitable for use as basketball and volleyball courts, rhythmic dance floors, etc.	–	5
	(5) *Bathing* (11:37; 21:98-101; 37:43-44; 60:30)		
75.	Elementary schools should be equipped with showers adjacent to the playrooms or gymnasium.	–	4
	f. *Cleaning* (11:36-37; 51:173-5, 188; 52:183-192; 93; 110:490)		
76.	It is essential that the cleaning and care of the building be not inferior to that found in the best of homes.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
77.	Whenever possible, the floors should be waxed to reduce dust and to eliminate the need for frequent scrubbing. Classrooms should be scrubbed and waxed twice a year. Untreated floors should be scrubbed monthly.	4	4
78.	All floors should be cleaned at least daily, corridors, stairways, and kindergarten rooms twice a day, and all floors should be frequently mopped.	4	5
79.	Furniture, equipment, walls, and ceiling should be kept free from dust.	4	5
80.	Windows should be washed frequently enough to keep them clear. The minimum washing should be once a month on the inside and three times a year on the outside.	4	5
81.	Janitors should clean the blackboards at least once a week, and should clean the erasers two or three times a week with a vacuum cleaner.	4	5
82.	The toilet rooms should be kept so clean that no odor is noticeable in the toilet or elsewhere in the building. The lavatories, urinals, toilet bowls, and seats should be washed thoroughly each day, and the floors should be mopped after each recess period. Deodorants are condemned as not contributing to cleanliness, but as an attempt to cover up evidence of its need.	5	5
	g. *Heating and Ventilation* (9:128-158; 11:23-33; 30:37-39; 31:2-5; 38:69-73; 48:44-47; 51:240-242, 294; 55:1292; 57:523; 60:15-27; 103:2, 4-9; 104:74-78; 108:5)		
83.	The heating system should be of ample capacity, and so installed as to insure the maintenance of uniform temperature in occupied rooms with a variation not exceeding 3°F. at a plane 3 feet above floor level.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
84.	During the coldest months, the most desirable classroom temperatures are from 65°F. to 70°F., averaging around 68°F.	4	5
85.	Automatic temperature regulation should be provided for maintaining the minimum temperature requirements. The teacher should be responsible for watching the temperature of her classroom.	4	5
86.	The ventilating system should supply every occupied room during the entire time of occupancy with a minimum supply of 10 cubic feet per pupil per minute, of clean pure outdoor air. (Legal requirement in some states is 30 cubic feet, per pupil, per minute.)	4	4
87.	The air should be changed three times an hour. There should be a slightly fluctuating air motion in the classroom all the time	4	5
88.	The manner of obtaining favorable air conditions is dependent on structural provisions and maintenance. Practically favorable conditions can best be obtained with window ventilation and gravity exhaust.	4	5
	2. *School Feeding* (30:48-49, 175-176; 32:48-64; 45:30-31; 53; 85; 110:400-3)		
89.	The school should provide its pupils with lunch when the distance from the home forces the child to remain at school during the noon hour, and when the school is located in a neighborhood where the mothers are employed outside the home.	4	5
90.	The control of the school lunch should be entirely in the hands of the school authorities, should be managed by a person trained for her work, and supervised by the nutrition teacher or the dietitian.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
91.	The lunch should provide approximately one-third of the daily food requirements of every pupil, should be suitable, palatable, and attractive, and should be served at a minimum cost. Profits should be looked upon with disfavor.	4	5
92.	The lunch room should be well-lighted, well-ventilated, attractive, and accessible. It should be free from noise and confusion and should encourage proper selection of food, as well as provide a suitable atmosphere for an enjoyable meal.	4	5
93.	In communities where study or observation established the fact that children are not receiving sufficient food, the school should furnish supplementary feeding at the period in the day when it seems to be most needed. The school will have to determine whether the need exists and what foods best meet the needs.	4	4
	3. *The Hygiene of Instruction*		
	a. *Classification* (8:125-27, 160-63; 81)		
94.	The basis—The progress, efficiency and emotional health of the children should be safeguarded by homogeneous grouping.	3	4
95.	The gifted child—Special groups should be provided for the gifted, that is, the upper 2 to 4 per cent on the educational and intellectual scale.	3	4
96.	The seriously retarded child—A special group should be provided for the 1 per cent or less of seriously retarded children. Fifteen pupils should be the maximum number in such a class.	4	5
97.	The pupil should remain in the class only while he is getting definite training not provided for in the regular classes.	3	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	b. *The Arrangement of the School Program* (8:20-39, 52-55, 290-299; 11:49-65;11a: 387-97; 44:10, 12; 55:1279, 1288; 81; 110:547-49)		
98.	The basis of arrangement—Since children must provide energy not only for work but also for growth, the normal work level should be regarded as their maximum; that is, the level at which they can work without fatigue.	4	5
99.	Adjustment as to length of time—Six hours of work is the maximum for children, with not more than three hours without food. If home work is required, the school day should be shortened. A shorter day for the younger children is advisable.	4	5
100.	The program should be so arranged as to provide for rest periods in the middle of each session, for diversion by alternating one activity with another, and for play.	4	5
101.	The school program should provide for regular lunch periods of sufficient time for lunch and rest.	4	5
102.	Adjustment as to demand—The amount of work required of a child should be fixed by what can be accomplished by an individual working at normal speed within the time limits of the school day. The work should be adapted in amount and difficulty to the individual child.	4	5
103.	Home study should be wholly eliminated in the elementary school. Home assignments should be simple and easy; i.e., light reading	4	5
104.	Adjustment as to working conditions—Conditions that arouse an outflow of emotion should be avoided. Nagging, quarreling, bullying, fear, over-excitement, and worry are included.	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	The school should provide:		
105.	Tasks that are challenging and satisfying. . .	5	5
106.	A desirable outlet for feelings in music, art, play, and social activities.	4	5
107.	Teachers who are calm, deliberate, and well poised.	5	5
108.	A situation of freedom, and happiness in the school and in each room.	4	5
109.	Supervision that prevents quarreling, teasing, bullying, fighting, fright, etc.	5	5
110.	Protection from overstrain in connection with special programs, drives, and holidays.	4	5
111.	A minimum of emphasis on grades, examinations and preparation for examinations.	4	5
112.	For the maintenance of good relationship between teacher and children.	5	5
113.	Adjustment as to materials should be made so that those which the child must use are selected and utilized in accordance with the principle that the child's right to live healthfully throughout the school day should be safeguarded.	4	5
114.	School books should be constructed of cream paper without glaze, with short lines—about three inches—wide margins, and large print.	4	5
115.	Coarse writing pens or soft pencils should be provided for children.	3	5
116.	Clean blackboards should be placed in a good light.	4	5
117.	There should be no fine work for young children.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	c. *Teacher and Child Relationships* (7:452; 8:59; 30:93; 44:32; 48:53, 59-61; 81)		
	The morale of the classroom is conditioned by teacher-child relationships. The following relationships contribute to good morale:		
118.	An absence of tension in the classroom. . . .	4	5
119.	An evidence of self-organized groups for work and play.	4	5
120.	Freedom of pupils to move about in performance of regular work.	4	5
121.	An enthusiasm for the task.	4	5
122.	An absence of teacher domination of pupil thinking.	5	5
123.	Mutual respect and confidence between pupil and teacher.	5	5
	4. *The Health of Teachers* (7:413-431; 17:77-78; 40:23-27; 55: 1281, 1293; 69:98-126; 70:437-469; 81)		
124.	The school should provide a thorough health examination for all teachers in service. The examination should be made by the school physician.	4	4.5
125.	The school should require health qualifications for the employment of teachers.	4	5
126.	The school should provide leaves of absence with some remuneration for recuperation and rest whenever the condition of the teacher warrants it.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
127.	The school should analyze teacher absences for the purpose of determining methods of safe-guarding the teacher's health.	4	5
128.	Every school building should include a teachers' rest room. Toilet and washrooms should be adjacent to the rest room.	5	5
129.	Thirty-five pupils should constitute the maximum teacher load in the elementary school.	4	5
130.	The school should provide wholesome living conditions for teachers in communities where satisfactory accommodations are not available.	4	4
131.	Teachers should be encouraged and assisted to form hiking clubs and other types of wholesome recreation.	4	4

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	HEALTH EDUCATION		
	"Health education is the sum of experiences in the school and elsewhere that favorably influence habits, attitudes, and knowledges related to the health of the individual, the community, and the race." Wood.		
	ITEMS INCLUDED IN THE STANDARDS		
	A. ADMINISTRATIVE ORGANIZATION (2:29-31, 142-50, 456-68; 3:126; 7:23-30; 13:97-101; 26:3-8; 27:99-102; 18-71; 30: 119-20, 122-23; 39:5; 46:552; 48:69-74; 73; 74; 76; 77; 78; 79; 81; 82; 83; 85; 87; 101; 102:12; 107:86)		
	1. *General Policy of the School Regarding Health Education.*		
132.	It is essential for the school authorities to recognize the underlying philosophy that health education as a major life activity is a way of living—mentally, emotionally, socially, and physically, and that as such it cannot be treated as a special subject, but must grow out of and be a part of all child experiences in the school, the home, and the community.	5	5
	A policy which includes the recognition of this philosophy will be reflected in:		
133.	A building, which in its construction, care and sanitation, safeguards the right of the child to live healthfully throughout the school day.	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
134.	Provision of ample opportunities for healthful practices through equipment and facilities, wash basins, soap, towels, etc.	4	5
135.	Administrative provision for the utilization by teacher and pupils of all available opportunities for healthful practices, as hand washing, control of lighting, regulation of temperature of classroom, etc.	4	5
136.	Administrative provision for educational use of professional health service.	4	5
137.	An administrative plan for curriculum building in health education that will provide for teacher participation, and for a curriculum that is a progression of healthful experiences. This precludes activities that in themselves are not hygienic.	4	5
138.	Administrative provision for instructional service that reflects a recognition and application of the principles of hygiene of instruction.	4	5
	2. *Administrative Supervision* (4:248-249; 13:83-86; 30:122, 132, 136, 156-157; 44:38; 64:173; 176; 70:472-492; 73; 110:40-71)		
139.	The administrative supervision of the health education activities of the school system should be vested in a qualified person responsible to the superintendent of schools. The administration of all health work of any school should be directly under the principal of that school.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
140.	The school should provide the best possible environment for the program of health education. (The minimum essentials are set forth in detail in *The Hygiene of Environment.*) ..	4	5
141.	Provisions should be made for a definite allotment of time for health education for each semester of the child's school career.	4	5
142.	Provision should be made for an articulation with all the social agencies of the community that have a contribution to make to the health education of the school child.	4	5
143.	The school should provide suitable materials of instruction in health education. These materials should be readily accessible for the use of teachers and children.	4	5
144.	The school should provide new and replacement materials on the request of the teachers.	4	4
145.	Administrative provision should be made for the determination and use of the most effective kind of instruction in health education in the existing type of school organization.	4	5
146.	In the traditional elementary school, the chief responsibility for the health education of the child is vested in the classroom teacher. In the elementary school, health education should be an integral part of the daily living of the child and not a special subject.	4	5
147.	In the platoon school and the junior high school, the responsibility for health education should be vested in an inter-departmental committee working through the home room teachers.	4	5

* In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
148.	In the senior high school, the responsibility should be vested in an inter-departmental committee working through the teachers of the special subjects, and guided by a coördinator who should supplement the contribution of the other teachers when the need arises.	4	5
149.	Since child life at school and at home is an integral whole, the school cannot accomplish its purpose without the active and intelligent coöperation of parents. Reciprocally, the school should help the home. Administration provision should be made for an optimum of home and school coöperation.	5	5
	3. *Supervision of Instruction* (10:73-86, 540-566; 15:77-83, 262-76; 30:156-57; 43:8-9, 203-06, 215; 65:14-18, 21; 89; 110:551)		
150.	The supervisor of health education should have thorough training in the principles and techniques of general supervision with reference to both elementary and high school levels.	4	5
151.	The supervisor of health education should have thorough grounding in the subject matter of health education and the allied fields of biological sciences, nutrition, psychology and sociology.	5	5
152.	The supervisor of health education should possess those characteristics of physical health and personality that favor adaptation, the appreciation of teacher and child problems, and cöoperation with other agencies in the home, the school and the community.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	The supervisor of health education should show an evidence of professional growth through use of:		
153.	Reports on scientific discoveries and researches that have a bearing on the problem of general education and health education.	4	5
154.	Educational conferences, periodicals and other publications.	4	5
	The functions of creative supervision should include teacher training and guidance through:		
155.	Anticipation of teacher need for scientifically sound health education materials for both teacher and pupil.	4	5
156.	Interpretation of community situation and problems to teachers and the guidance of teachers in the use of community resources for health education.	4	5
157.	Development of techniques for teachers' use in analyzing home and school and community situations affecting child health.	4	5
158.	Guidance in the use of these techniques in specific schools and in the utilization of findings for the purposes of setting up healthful school practice.	4	5
159.	Provision of materials and methods for evaluating and measuring progress in health education.	4	5
160.	The provision of technical advice to the administrator on administrative problems affecting child health.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
161.	Active membership in the general curriculum committee, and in this capacity should interpret health education needs to the committee and guide the teachers in their participation in the curriculum building and curriculum use. .	4	5
	B. CURRICULUM CONSTRUCTION (2:23-123; 2:26-42; 7:463-468; 15:262-273; 19:37-40; 24:5-7, 10-11, 14-15; 28: 36-80; 30:119-22; 47:11-28, 41-69; 56: 215, 220, 227; 63:56-62; 66:303-319; 76; 77; 78; 81)		
	1. *General Principles*		
162.	The health education curriculum should be guided by the general curriculum committee, and built slowly and gradually by the active participation of every classroom teacher, principal, supervisor and administrator in the school system. It should not be built by a group of specialists or a small committee of teachers working separately and apart from the general curriculum committee.	4	5
163.	The first step of the curriculum committee should be to clarify its thinking as to philosophy and scope of health education, and as to the place of health education in general education.	5	5
164.	The clarification of this philosophy should provide for the selection of curriculum content based on the recognition of the equal importance of the physical, emotional and social aspects of health.	5	5
165.	The clarification should also provide for an integration with other subject matter courses that make a definite contribution to better living.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
166.	The goal of curriculum building in health education should be a daily living program subject to change and growth, and applicable to local needs—not a printed course of study. . .	5	5
167.	The techniques used in building the curriculum in health education should be those that have been shown to be sound through use in general curriculum building.	4	5
	The techniques used for determining objectives should include:		
168.	Direct analysis of the natural activities of children, to find specific health education needs in habits and attitudes.	5	5
169.	Direct analysis of the social needs of the learner, i.e., the community and school analysis to isolate the health education shortages which become health education objectives in the curriculum.	4	5
170.	Analysis of the needs of the learner in the opinion of competent persons, as progressive objectives of health conduct set up in the form of a scale of behavior.	4	5
171.	The objectives should be organized according to life activities, i.e., healthful practices rather than according to structure and function. . .	5	5
172.	Objectives should be organized according to grade levels.	4	5
173.	Objectives should also be organized on the basis of subject matter courses wherever the health education objectives are legitimate objectives in these courses.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
174.	The content of the curriculum in health education, i.e., the situations, activities, and materials best adapted to the achievement of the objectives for a specific group of children should be determined through the use of a set of criteria that may serve as a guide to the classroom teacher.	4	5
175.	The curriculum plan should contain an outline of the objectives in health education together with a sequence of experience shown by analysis to be reasonably uniform in value in achieving the objectives; and subject matter found to be reasonably uniform as the best means of engaging in the experiences.	4	5
175a.	The committee should make provision, so that the part of the health education curriculum plan which represents the daily life situations and interests from which the immediate specific needs of the children arise, may be made from day to day.	4	5
176.	The foregoing outline or course of study should contain illustrative units actually developed in the classroom by experienced teachers, and conforming to the accepted criteria.	4	5
177.	Provision should be made for constantly revising the curriculum plan in the light of scientific research and classroom experimentation.	5	5
	2. *Curriculum Contest* (14:16; 16:755-762; 24:37-71, 127-143; 30:35-104, 127-140, 162-239; 33:14-16; 34:137-139; 67:223-229; 77; 109:1-25) a. *Objectives*		
178.	Specific health objectives for local situations determined through (1) direct analysis of the natural activities of children, (2) analysis of home, school, and community life, and (3) an analysis of the learner's needs in the opinion of competent persons, in many surveys, indicate that probably the following healthful practices will be included:	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
	Those habits, attitudes, appreciations, and knowledge essential to the maintenance of the healthy organism, as progressively satisfying practices:		
179.	In the selection of a balanced diet.	4	5
180.	Of vigorous outdoor play.	4	5
181.	In maintaining a desirable schedule for sleep and rest under favorable conditions.	5	5
182.	In hygienic habits of elimination.	5	5
183.	In wearing clothing suitable for the weather.	4	5
184.	In willingness to have defects corrected.	5	5
185.	In arranging hygienic lighting conditions.	4	5
186.	In assuming responsibility in controlling ventilation.	4	5
187.	In care and protection of sense organs.	4	5
188.	In care of throat, teeth, etc.	4	5
189.	In care of feet and posture.	4	5
	Those habits, attitudes, appreciations and knowledge that are essential for a healthy personality, as progressively satisfying practice:		
190.	In meeting difficulties squarely, and in facing reality.	5	5
191.	In getting on with other people, and in coöperating with them in work and play.	5	5
192.	In independent thinking and in use of opportunities to solve one's own problems.	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
193.	In successfully completing a task.	5	5
194.	In those work habits that make for efficiency.	4	5
	Those habits, attitudes, appreciations, and knowledge that make for worthy membership in a healthy home and community, as progressively satisfying practice:		
195.	In understanding and use of the principles of bacteriological cleanliness and such habits as help to prevent the spread of disease.	4	5
196.	In an increasing degree of appreciation of the value of professional health service, and an increasing acceptance of responsibility in seeking professional health service when needed especially for the regular health examination.	4	5
197.	In an increasing appreciation of the wide social and moral significance of temperance, as well as the development of worthy convictions, and habits regarding temperance.	4	5
198.	In an increasing sense of responsibility, for acquiring knowledge and skills in protection tion of one's own safety and the safety of others.	4	5
	b. *Situations, Activities, Subject Matter* (24:19-21, 151-155; 43:78; 56:233-235; 76; 77; 78; 91)		
199.	The selection of activities and situations from among those in current use should be made from those which experience has shown to be reasonably uniform in value for achieving the objective.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
200.	The activity should be fundamentally hygienic. That is, its use should be beneficial not only to the physical health behavior of the child but to his emotional and social health behavior as well.	5	5
201.	The use of the activities should not only achieve the health education objective but should lead the pupils to widen their interests, i.e., they should stimulate the child's further development.	4	5
202.	The use of the activities should tend to secure the coöperation of parents, school administrators, teachers, pupils and community agencies.	4	5
203.	The activity should be so related to life situations as to be really significant.	4	5
204.	The selection of subject matter from that in current use should be made from that which experience has shown to be reasonably valuable in achieving objectives.	4	5
205.	The subject matter should conform to scientific principles. It should be valid. The teaching techniques should be in accord with the principles of learning.	5	5
206.	The subject matter should provide for difference and needs of individuals and groups.	5	5
207.	The subject matter should satisfy fundamental educational objectives.	5	5
	c. *Materials and Methods* (2:149-153, 227-232; 4:250-257, 247-248; 57:74-79; 76; 77; 78)		
208.	The selection of health education materials should be for the purpose of furnishing experiences which will favorably influence health conduct—physical, emotional, and social. This purpose is best achieved through the use of a wide distribution of means, the use of which results in both satisfying and wholesome outcomes.	5	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by groups	
		Student	Specialist
209.	Materials that let the child know what the right behavior is should utilize not only categorical statements of what the right behavior is, but also a range of experiences, real or vicarious, in which a given behavior results in satisfaction.	4	5
210.	Materials which furnish the scientific sanctions for a given behavior, should include not only statements of scientific facts, but accounts of discoveries and experiments through which scientific facts were brought to light, and opportunities for children to rediscover the facts for themselves through carefully set up experiments, or studies.	4	5
211.	Materials that show a child how to acquire a skill should supplement written directions with charts and drawings.	4	4
212.	Materials planned to attach an approval to a desired conduct should include a carefully selected range of appeals, the response to which will be wholesome as well as satisfying.	4	5
213.	Discovery, experimentation, and exploration in the interest of others and one's self should be given precedence over competition and contests.	4	5
214.	A careful balance of successful achievement should be given preference over "thrills."	4	5
215.	The materials should safeguard the child's right to experiences in which he deals with clear ideas. He should be led to discover facts through handling real materials or those that have to do with reality. This will preclude the use of dreams or fantasy as a means of giving the child a scientific fact.	4	5
216.	The conditions governing the activity should provide for independent thinking.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
217.	The conditions governing the activity should provide for coöperative effort.	4	5
218.	The activity promoted should be fundamentally worth while in the life of the child or the group participating.	4	5
219.	The relationship between an activity and an award should be so close that the child's interest moves naturally from the award to the activity, and that after the initial period the award might be removed without affecting the interest in the activity itself.	4	5
220.	The selection of the winner in any contest should be based upon objective evidence scientifically determined.	4	5
221.	The principle of "equalization of opportunity" should be so safeguarded that violence to the emotional health of both winner and loser in any contest is avoided.	4	5
	d. *Measurement and Evaluation of Progress* (1:1-42; 30:44-51; 56:393; 81)		
222.	Provision should be made for development of suitable instruments for measuring the results of health education.	4	5
223.	Provision should be made for testing knowledge of matters concerning hygiene.	4	5
224.	The tests should include knowledge of what is the correct health behavior.	4	5
225.	The tests should include knowledge of the scientific facts giving sanction to the desirable behavior.	4	5
226.	Provision should be made for testing the attiudes of children toward the health practices or the scientific facts.	4	5

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TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
227.	The tests should include tests of what the child believes or thinks.	4	5
228.	The tests should include tests of how the child feels about it.	4	5
228a	Provision should be made for checking on health practices.	4	5
229.	The tests should include checking on child behavior through observation.	4	5
230.	The tests should include test situations in which the child reports what he would do under the circumstances.	4	4
231.	The tests should include self checking on practices. (Must be safeguarded because of source of error.)	3	4
232.	The tests should include rating of others on health practices, such as a "Guess Who" test.	3	2
233.	Provision should be made for safeguarding children from undesirable emotional or moral experiences in the testing program.	5	5
	C. PREPARATION OF TEACHERS (30:240-244; 59:510-511; 65:206-296; 89)		
234.	Inasmuch as the responsibility for instruction in health education rests primarily with the classroom teachers, the problem of training teachers in health education becomes a problem of training all elementary school teachers, and in a varying degree, all high school teachers.	5	5
	The preparation should provide:		
235.	A wide range of scientific subject matter basic to health education.	4.5	5
236.	Application of scientific knowledge to solution of practical health education problems.	4.5	5

* In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

TABLE 5 (Continued)

TENTATIVE STANDARDS FOR A SCHOOL HEALTH PROGRAM AND THE MEDIAN RATINGS* GIVEN EACH ITEM

Item No.	Statement of Items Included	Median Ratings by Groups	
		Student	Specialist
237.	Educational principles as applied to the utilization of daily and casual situations and activities for health instruction.	4	5
238.	Mental hygiene and hygiene of instruction . .	4	5
239.	Sources of health education materials.	4	5
240.	Educationally sound criteria for the selection of health educational materials.	5	5
241.	Supervised experiences in observation and teaching in health education in a laboratory school.	4	5
242.	An environment when in training that insures as healthful and vigorous a life as possible. . .	5	5

* In the rating scale, the order of importance, beginning with the highest, was: 5—ESSENTIAL; 4—HIGHLY DESIRABLE; 3—DESIRABLE; 2—OPTIONAL; 1—QUESTIONABLE; 0—UNDESIRABLE.

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Publications:

1. Educational Aspects of a Health Examination. Nation's Health, June, 1926.
2. Report: Health Education in Nine School Systems of New York State. Albany: University of the State of New York, 1927.
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